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THE INDUSTRIAL ARTS MAGAZINE

DECEMBER 1917

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INDUSTRIAL-ARTS MAGAZINE

Vol. VI DECEMBER, 1917 No. 12

A WRIGHT TYPE OF DWELLING.

Japanese Influence in Our Industrial Art

T. O'Donnell, Chicago

THERE never has been a country, there is no nation—the statement is made advisedly—whose daily life has been enriched by the influence of genuine Industrial Art as has been Japan and the Japanese. For there the artistic feeling extends into every ramification of their daily life, enriching it, coloring it with the glamour of a thousand romances and creates a common ground on which we can meet and enjoy, regardless of all national or other prejudices.

Origins of Japanese Art.

It is not the intention, in an article which must necessarily restrict its scope to the field which this periodical serves, to wander afield and generalize with respect to the origins and purpose of the industrial art of the Japanese. But their art, as a means of expression, is so closely interwoven with their religious experiences that an article which disregarded the latter would not be fulfilling its purpose. Neither would it enlighten the reader on the basic features which underlie all Japanese art and which, regardless of their interpretation artistically by the occidental mind, possess for the Japanese very literal religious significance.

Just as there crept out of Italy influences which made the Middle Ages a Golden Age in art; influences which gave birth to the Renaissance; influences, if you please, which, if they developed effects at times foreign to an apparent source, yet owed their compelling power to an inherent religious idea, just so the art of Japan has reflected in almost an infinity of ways the impulses of manifold religious experiences. One thinks of the Japanese as masters of the light and fanciful; as consummate reproducers of the soft sigh of the rain or of a cherry blossom blown

A WRIGHT INTERIOR.

with the wind. But with them art is the conception of an ideal to a mental depth as yet inconceivable to the occidental. Over all their days hovers the mighty presence of the Dragon; art is the essence of Life, and therefore eternal. And with the Japanese and their mode of religious thought this makes their art but an eternal worship of Death. The idea is abstruse, I grant you; but it will serve to show why Japanese art to all intents and purposes has remained stationary, for a period beyond our comprehension, altho the whole mental attitude of this peculiar people is changing now.

Buddhism and Shintoism.

Shintoism and Buddhism are the two great forms of religious thought which have served to crystalize the artistic thought and effort of the Japanese. If a nation's art is simply the concrete sum total of that nation's spiritual experiences, these two religions emphasize the fact to a marvelous degree. From Buddha the Japanese artist and artisan drew their great love and consideration for the animate and inanimate, a love which has been transmuted a thousand times over into replicas that shame Nature herself. For Nature, you will admit, can hardly make a cricket laugh or a crab look quizzical; a Japanese, in his copy, can. Shintoism antedated Buddhism. Its influence on the Japanese mind can best be expressed, paradoxically, in this extract from our own Scriptures: "Whatsoever thy hand findeth to do, do it with all thy might." For it explains why Japanese workmanship, of the days when it *really was workmanship*, manifests a degree of care, of innate respect for the object, in every portion of its structure, seen or unseen, which is simply perfect. It decreed that whatever was to be used or worn should look simple and unpretentious, but be worthy of the most minute examination. It is because Japanese industrial art manifested this principle to a truly marvelous extent that it is worth emphasizing in our own; therefore this article.

Japanese Art a Logical Development.

No less an art authority than our own William Morris belittles the art of the Japanese. All art, he says, must have a definite architectural foundation to be genuine or worthy of emulation. The Japanese have no architecture, he states further, merely a makeshift, and reasoning *a priori* he proves to his satisfaction that their art is insincere and not worth serious consideration. But Japanese architecture is as logical a development from the original sources as are our two great historic schools of the classic and gothic and has entwined itself with the life of the nation to a greater and more reasonable degree than either of the above named schools have, say, in Europe or our own America.

Originally developing from Ainu, and later, Chinese sources the Japanese have chosen the most suitable material at hand—wood—and have made their architecture manifest in a striking degree the full possibilities of the substance of which their structures are built. One wonders at the curious curving characteristic of their roofs, but this is easily explained by their adapting a suggestion of the sagging tent pole which formed the shelter of the nomadic Tartar tribes from whom, thru the Chinese, they secured the idea. Their buildings are built in secure units, resting on peculiar foundations, ideally fitting in as part of the hilly landscape. In short, they developed the most natural and suitable style of building for a country ravaged periodically by the earthquake, the monsoon and the typhoon. In the decoration of these buildings they evidence a skill in

A

A. An American Wall Paper Design after the Japanese Pattern. Attractive, but displays no originality. Original in Gray and Black.

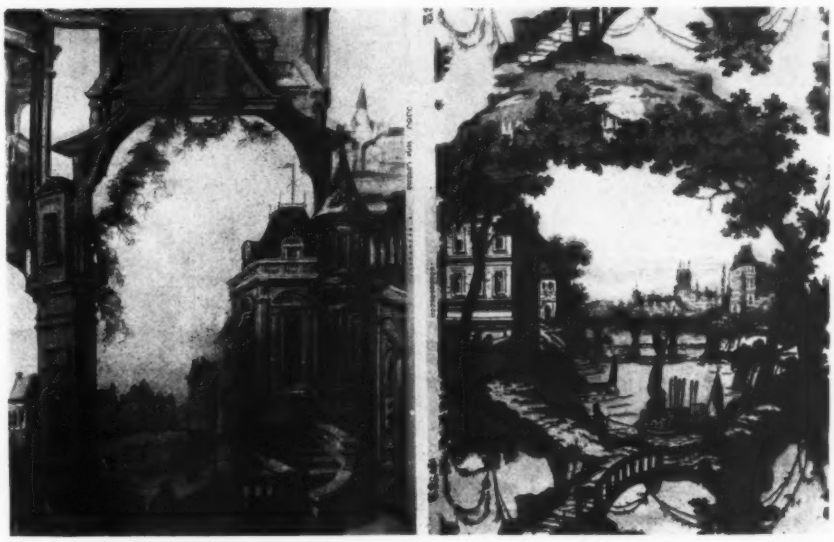
wood carving which surpasses in its finished results the best work of medieval wood carvers. However, this latter is beside the point as to the main feature, as it relates to this article. And this feature is the development of a distinct—some have called it the only logical—style of American architecture based in its main outlines and elements on the Japanese model.

The New Architecture of America.

An architect, Frank Lloyd Wright, has loved and studied and seems to have understood Japanese art. The net result of his impressions has come into play in his architecture. The Wright type of building is not Japanese in type, however, but harmonizes with it without the use of a single Japanese form. It is capable of so many multiplications in varying form and design that it in general is as suitable for the larger public or office buildings as it is for cottages or dwellings. Here we have the Japanese simplicity of design, or ornament serving a logical purpose and working out from the nature of the plan, rather than as gingerbread decoration applied haphazardly to the outside. The roof projects and in so doing gives an umbrageous effect like a Japanese building, altho toned down and fashioned with a geometrical precision more in accord with American temperament and methods. Aesthetically the result satisfies. From the standpoint of good construction it offers a most feasible solution of modern building difficulties, or, rather, incongruities. Here is a genuine style system of design which, in a small or large building, distributes itself over the sub-structure logically, and not in twists and makeshifts which make the unseen portion of so-called "classic" style public or office buildings the despair of the clear-reasoning engineer. At least here is an instance where Japanese art has been digested by an artist, with results which have been recognized as individual and valuable by the architectural world.

Art and Industrial Systems.

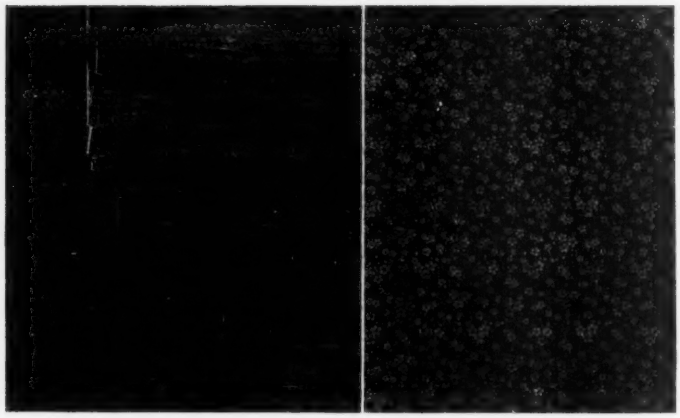
We may quarrel, and with good reason, with the style of drawing and painting affected by the Japanese. Perspective, chiaroscuro, anatomy—all the incidental detail of the European school is absent in these departments of their art. Your typical Japanese artist is a true impressionist. He represents no more of his subject than he considers sufficient to convey his meaning. He seeks rather to awaken ideas by suggestion than to explain them by elaboration of detail. There is a rhythm and sweep to his design, of whatever nature, which can only be explained by his long calligraphic training, for the very nature of their script demands a flexibility of action which we, in our occidental method of writing, lack sadly. And this facility, in spite of the fact that there are no written laws for his guidance, enables him almost invariably effectively to dispose the various parts of his design in such a manner that, regardless of whether it be simple or highly complex, it emphasizes in the highest degree a sense of the fit and picturesque.



B C

B and C. American Adaptations of Japanese Scenic Wall Paper Patterns. Mistaken Applications of an Excellent Original Idea and Tiresome as Wall Coverings unless intelligently handled with Restraint. Originals in Grays and Ecrus.

All very well, you may say, but we are discussing Japanese influences in *industrial* art; the art of the painter or the draftsman does not concern us. But herein lies the secret of the universal appeal of their work;—only qualified painters and draftsmen were called on to furnish the designs for the industrial arts and regardless of whether the designs were for work in wood blocks, embroidery, lacquer, carving, ceramics, weaving or the chasing of metals for ornament or sculpture. When we devote the same care to apparent non-essentials our own industrial art will take its place in the hearts of the people in a



D E

D. Japanese Grass Cloth. Original in Gray, Tan or Light Green. This is made of Woven Grass and has a Paper Backing.

E. A very Attractive American Adaptation of a Japanese Cherry Blossom Design. Original in White and Pink on a Gray Ground.

manner and in a shape which will command the same respect and universal admiration.

It is but natural that a nation recognizing the importance of even the simplest craftsman's work should dignify the calling of that craftsman. So we find genealogies of families which attained high perfection in their individual pursuits traced and kept with a religious and scrupulous care which might befit the chronicles of a royal line. It was the ambition of every craftsman to produce work of such excellence that his name would be incorporated in the national language as a synonym for extreme perfection. This universal pride in the product of their hands made for a true democracy and the highest honors were placed within the reach of the lowliest laborer, as in the instance of a humble carpenter, only one of many, and named Li Sung, who rose to high rank in the academy. If we can trace other influences of Japanese art on our own, we can depend also on a similar result in connection with the proper appreciation of our own efforts in industrial art. For, rightly developed and appreciated, we can make the industrial art of America a force for greater democracy as well as an aesthetic success and open the avenues of public and social success to the efficient, if humble, worker in his craft.

Concrete Application of Japanese Ideas.

So far this article has been generalizing, to a certain extent; but it has been generalizing which is necessary to a proper appreciation of the concrete examples wherein it will endeavor to show the result of an application of Japanese idea, treatment or design to products ranging within the appeal of this publication. This does not mean the slavish adoption of their style, but rather of adapting its best features to the work in hand. It calls for an adaptation so simple and so suitable to the purpose of the instructor in industrial art as to make for a marvelous facility and an entirely satisfying product on the part of the students under his charge.

Influence in Interior Decoration.

As the condition of the building material market has more and more forced people of moderate means to curtail the outside adornment of their homes almost to the point of austerity, the tendency is becoming general to enrich the interior with an elaborateness of furnishing which the plain exterior more than merely accentuates. Outside of architecture, which has been indicated in a general way at an early point in this article, and which is not quite within its scope in the present instance, the chief point of interest before us is the influence of Japanese styles on our accepted modes of interior decoration. In its way it has helped us to grow impatient of sham and artificiality and useless bric a brac.

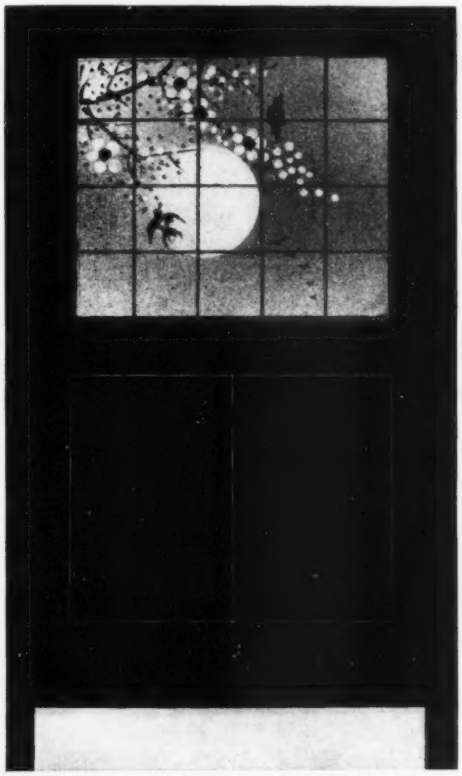
No one room in the writer's recollection has created such a vivid mental image of absolute restful-

Japanese Screen. Maple Leaf Design, hand embroidered in warm blue, brown and gray on a soft green, close woven Japanese burlap. Frame finished in black, and lacquered. Not an expensive screen, but very effective.

ness and fitness as one papered in a soft grey Japanese grass paper. It seemed so limitless, yet identified each particular furnishing indescribably.

In fact, we are indebted to Japanese-Chinese influence for wall papers at all. The earliest papers show pronounced skill in their printing and compare more than favorably with the occidental styles of the present day, which become more successful and more pleasing as they revert to the earlier designs. True adaptation of the Japanese idea in this connection presupposes a correct taste in pattern spacing; the creation of artificial horizons, outlooks, anything which, while recognizing the purpose of the walls from the standpoint of construction, absolutely refuses to submit to their logical limitation as to space. In their wall decoration they give the eye a play of space and distance totally foreign to the actual dimensions of the room itself. And this is hardly as illogical as it seems. Imagine for an instant the walls of a favorite room papered or finished in some neutral tint. Imagine them stencilled with a fine restraint and even haphazardly with, say, some herons flying low against the moon. You would create an atmosphere seemingly severe, yet altogether satisfying, and which would at once force you to key every picture, every bit of furnishing, to be in keeping. It would force harmony, willy-nilly, thruout the furnishings of the room. And this is the test of true artistic merit and which distinguishes so many of our present hodge-podge of conventionalized designs in wall papers to their discredit. They strike no keynote and are a thousand times more depressing than the honest white plaster they are designed to cover.

Design for a Bookcase. There are three sliding panels, with Japanese Prints therein. This could be made of maple in a black waxed finish.



Design for a Victrola Cabinet. The Sound Trumpet has a painted silk cover. Rectangular reinforcements of natural finished bamboo do not interfere with the design on the silk. The body of the cabinet is finished in black, high or dull polish. Kreisler's playing of the Humoresque would be doubly effective from this.

The Day of the Screen.

Screens fill a most important purpose in the unusually open construction of Japanese houses. They add privacy to portions which demand it and serve to break the force of drafts. In our adaptation of them they have been made to serve the desire for ornament more than necessity and it cannot be denied that they add to the livableness of any room, when rightly chosen. In their construction they exemplify a beautifully discriminating use of a wide range of materials, paper, silk, embroidery, mother of pearl and other carved inlay being used with telling effect. But in our adaptation of the screen idea we have not gone far enough; we can go farther to our advantage. A Japanese householder, for instance, would never permit the barren prospect of painted or varnished double doors to offend his artistic vision. They would be replaced by sliding screens serving the purpose of doors, it is true, but decorated in a way which would make them component parts of the *inside* of a room rather than indicating a means of egress *from* it. They would be decorated in typical Japanese fashion and show as thru a window the prospect of a cherry

garden, with perhaps his beloved and inevitable Fujiyama in the distance. And it would be an effect which the softening influence of side draperies would not deaden, but rather accentuate. Carrying the idea farther, he would so dispose the walls of what ordinarily would be a small room that the dividing wall separating it from another could disappear, fold away, if you will; and yet when back in its place would not give the impression of a makeshift, but of good construction and artistic finish. Sliding screen panels would make a bookcase, when closed, a thing without any of the rectangular square reed or cedar reinforcements showing on the outside.

Coming back to the adaptation of the actual screen itself, the familiar beaver or compo board lends itself admirably to the Japanese style of decoration, or its American modification, and rightly handled with the proper decorative restraint forms a fine subject for industrial art classwork and a finished useful ornament which is not to be despised.

Japanese Influence in Textiles.

While Japanese weaving methods differ very little from occidental methods, the finished article

A. B. and C. Japanese Brocades. (A) Cloud and water forms in silver powdering on gray ground. The powdering is a separate application after weaving. (B) Pottery designs in cream and olive green on an ecru background, with a gold thread high-lighting. (C) A beautiful pattern in green and gold. Flower blossoms and bamboo design. The dark portion is a raised gold weave.

D. E. and F. American Adaptations of Japanese Designs on Cotton. (D) Red, yellow, blue and green on a cream ground. (E) Yellow, white and pink on a delft blue ground. (F) Vivid greens, yellows, reds and brown predominate in this rather Chino-Japanese design, which is blocked in cotton crash, natural finish. Merely "pretty" patterns, with no message for the occidental mind.

of beauty in its own way, just as its contents reflected another sort of utility when the panels were open. A bit of painted cherry spray from a screen, with its pleasant accompanying birds, would fit well in the panel covering the sound trumpet of a victrola or similar cabinet. And it would accord so well with the purpose of the latter. In adapting any screen idea, or a portion of it, bodily, it is well to bear in mind that the rectangular reinforcements of reed or cedar in natural finish set off the general effect in the most satisfying degree. And it seems that the greatest success is met with finishing the containing border and the rest of the woodwork in a dark finish, black invariably and highly polished. This suggestion applies to the painted or varnished or stained adaptations only. Embroidered or inlaid material give a more satisfying result when left in the plain piece, transcends our own to a despairing degree. The design is often highly complex, high-lighted in the warp with shredded gilt paper, full of abstract, squarish forms which seem to suggest keys but are only generalized versions of dragon, face and cloud forms. The whole is interlaced with an infinity of other conventionalized forms, without meaning to the foreigner, but full of suggestion for those who delve never so little and endeavor to share with the artist a common knowledge of the ideals and experiences underlying his various *motifs*. So many of our own attempts in the weaving of textiles convey art messages which are meaningless; they seem to imply a lack of designing initiative and a thoro comprehension of that spirit in industrial art which can and should be conveyed thru expression. Where the Japanese weaver or artist or designer sidesteps for the nonce the

execution of any actually serious spiritual expression the play of his fancy can marshal a whole infinity of cloud patterns, of storks, of insects, of pine cones, of small diapers, of sail boats, of bats, of cobwebs, of fungi, of water, of feathers, of fire flies, of sea monsters, of broken diapers, of irregular powderings, of rosettes, of plaids, of waving lines, of rain, of things too numberless even to recall. But they are all meaningful, are closely allied to his daily life and, even if whimsical, convey a message all can understand. From the time his brain is first taught to register impressions, the influence which is brought to bear on him from every side practically forces his interpretation of them in suggestions and forms which are artistically correct. He seeks no farther than his own range but even within that is wonderful. How long shall we continue to adapt and distort unintelligently? Our own complex life is full of suggestions which require only the correct sort of perception to be transmuted into expressions intrinsically artistic. Take the conventionalizing of designs involving telephone poles and wires, monoplanes, the immense steel skeletons of buildings, any one of the many angles of our own modern work or play. "Impossible to execute artistically!" you say. Yet the Japanese have done it. They have been natural about it. We have been artificial. The revival of our textile industry in connection with tapestry has produced nothing more creditable than work approximating medieval excellence of design. Our other textiles are good, but approach excellence proportionately as they practically duplicate other models. With us as compared to the Japanese, it is simply a question of being sincere in designs which reflect the twentieth century, i. e., our own life and its aspirations. As to method, here the Japanese can teach us nothing which we do not already know; in the design of our textiles we need to be as modernly fanciful as they are delightfully archaic.

While this is wandering away, somewhat, from the actual subject of textiles itself, it involves a problem in design which affects textiles as well as the other departments of the industrial arts which owe the success of the finished product to effective designing. For the purposes of earlier training in industrial art as it is manifested in weaving, Japanese motifs offer simple but effective means to artistic results. But these results are nil, unless they breed in the student an incentive to treat the things which affect his own life in the same big, simple, and effective way and convey an impression of those things in a manner which contemporaries can understand and from which future generations can gain in knowledge.

(To be concluded in January)

THE EFFICIENCY HOME

Estelle Peel Izor, Supervisor of Household Arts, Indianapolis, Ind.

WHILE the United States government has been putting efficiency tests into every one of its departments, bringing every equipment up to its greatest strength, and while the men of the business world have been putting similar tests into their factories, offices, and corporations, the housewives of Indianapolis have been applying efficiency tests to every phase of home management.

In recognition of a need of a course in home efficiency, classes have been held at Emmerich Manual Training High School of Indianapolis, to study the principles involved in the artistic, economic, and efficient management of a home, and to make concrete application of them. These classes were organized under the vocational law of Indiana, which removes age limit and gives opportunity for women whose school days are over to take training in household management, more careful expenditure of money, and more artistic selection and arrangement of furnishings.

For several years these classes of earnest, thoughtful women have been studying the principles of home planning with me. In order that the principles might be made concrete each year we have had a specific problem in which we have actually demonstrated the furnishing and management of a house. One specific problem was the redecorating and refurnishing of a room in an old mansion for a person of moderate wealth. The cost of refurnishing the one room was $1,475. Another specific problem was that of actually furnishing a working man's house of four rooms for $150—such a house as could be maintained at that time, by a man who had a family of four and was earning $600 a year.

The specific problem for this past year was the Efficiency House—a home of a middle-class family. A group of business men composed of bankers, real estate men, and lawyers, who had become interested in the former problems in home planning, came with their contractor, and offered to build and loan a small colonial house which was to be used for class demonstration in our work in home planning. This offer was accepted and as the problem developed it seemed wise to make it an efficiency house. From foundation to the completed house we worked together planning for the greatest convenience, comfort, and beauty that could be procured for the specified sum of money.

The Study of Principles.

The course began with a study of the principles that govern the artistic, economic, and efficient furnishing of a home. It included the study of what constitutes good design in furniture; the purpose, durability, and character of the weave of floor-

coverings; the choice of pictures; the preparation and color of wood-finish; the color in a room; in short, the study of all the furnishings of the home. Each subject was made practical and was illustrated with quantities of materials and merchandise brought into the classroom. Not only the selection of furnishings, but the solution of the problem of arranging them, made evident the fact that art education does answer directly to real needs of daily life.

Planning the Home.

The problem which the class had to confront in planning the home was that of the middle-class woman of slight strength and small income, who is well educated and refined. In this home mistress and maid were one. The family was supposed to consist of a father, a mother, a son of twelve years, and a baby. The upkeep of the house was supposed to be based on an income of from $2,000 to $2,400. The house, which was located in Beverly Gardens, at Sunset Avenue and Berkley Court, contained a living room, a dining room, a small sun room, and a kitchen on the first floor. The garage, a storage room, and an electrically equipped laundry were in the basement. On the second floor were three bed rooms and a bath. The house and lot cost $5,500. An initial expenditure of $1,450 was set aside for the complete furnishing and equipping of the house.

As the building of the house developed, every detail which made for convenience, sanitation, comfort, and beauty was carefully planned. The most efficient plumbing and lighting systems were installed. Cupboards and closets according to feminine requirements were equipped with electric lights and windows. The garbage can was sunk with sewage connection. No detail was overlooked that could be made to come within the limits of the specified sum.

The problem of how to secure the greatest amount of beauty and convenience in furnishing the house with the smallest amount of expenditure now faced the class. There must be ability to select with artistic comprehension all things that go into the house from the simplest kitchen utensil, to the fine arts. Artistic simplicity must go hand in hand with economy. Beauty in common and familiar things must be secured, and artistic merit attained in the arrangement. When one realizes that everything used or fashioned is either beautiful or ugly, and has or has not artistic and economic value, it becomes apparent that even simple furnishings need not be ugly if wisely selected.

The women found that the first requisite in the furnishing of a home was to have a unified idea of the whole—not alone the unified idea of one room but of adjoining rooms and of the house as a unit. Each room was assigned to groups of women in the class who were held responsible for the consistent carrying out in detail of the unified plan decided upon. Each room had its function to fulfil and was in harmony with its neighbor, but not identical. The walls of the entire house were practically of the same French grey. Color came in the draperies, in the few large accessories such as turquoise or a vivid green chinese vase, or in the well-selected paintings. A few pieces of furniture of good design and sound construction rather than many pieces of poorer quality were selected. "Economy" came to mean articles of permanent value and durable quality even tho the initial cost was great. In the effort to approach an ideal for the home, the women were compelled to make compromises arising from conflicts between desire and the size of the purse, or inability to secure the article in the local market.

Efficient Home Management.

The class came to know that the great need in the home is efficient thinking; that is, efficient method or system for planning and dispatching work; that the power to see clearly, to analyze, to formulate or systematize, to master one's work depends upon personal efficiency. They learned the woman's place in the home is that of manager, director, purchasing agent; that she needs to take her responsibility in spending the income as seriously as the man takes his in the earning; that she faces the same problem that the man-of-affairs faces in his business, that of cost, value and qualities and relation of expenditure to income. The class, therefore, decided it was imperative that the homemaker understand definitely what her income is, that the husband must know how it is spent, and that they have the same motive and ideal toward which to work. The nature of economy, the ground it covers, and the ways it can be put into practice were discussed and made the basis of class activity. Lessons on the nutritive value of food, and general principles of cookery were given. A week's menus for the family living on such a salary were worked out. Afterwards these menus were printed in full and distributed among the visitors of the Efficiency House. The study of efficient clothing for a family living on such an income was given place in the course of study.

The members of the class made budgets for the stated income and based their accounts upon the

Boy's Room in the Efficiency Home.

experience of persons living on such an income. Itemized accounts of food for the family for one year, and of clothing for each member of the family for three years were worked out. These budgets together with three or four systems of keeping household accounts and suggestions of ways *to live* on a budget were placed on exhibition. These provoked keenest interest in our visitors. A card catalog record of every item of furnishing used in the Efficiency House was also exhibited and a copy of it was filed with the fire insurance company.

not mean a large number nor great variety, but well-selected tools and conveniences which would enable the housewife to do her household tasks in the best way, with least effort and with greatest success. The kitchen equipment included all fuel-savers, time-savers, labor-savers, and step-savers, which were placed in right relation to each other and to the processes each part entails. The electric range was equipped with a fireless cooker, and an over-head broiler and oven which had glass doors and a thermometer. We proved that the new efficiency equip-

LIVING ROOM IN EFFICIENCY HOME, INDIANAPOLIS.

Practical Demonstration.

When the plans were completed to the last detail, the members of the class arranged everything in its proper place in the house. One is not often given the opportunity to see fifty women, representing all degrees of wealth and widely differing experiences, working side by side without distinction, washing dishes, arranging furniture, books, or kitchen utensils, hanging curtains or pictures, laying rugs, etc., with unity of effort and purpose in the final arrangement of *things* which stood for so much thought.

The living room was conspicuous for its cheerfulness and simplicity. The kitchen and sun-room in which all labor was concentrated, proved to be most attractive to guests. The sun-room became a general utility room for it served as a breakfast room, and contained also a telephone, a portable electric sewing machine, and all household finance records.

The visitors found that an efficient kitchen meant efficient tools and efficient care of them, that it did

ment for a kitchen demands that all working surfaces, such as draining-boards and sinks, be of correct height. Efficiency engineers in the business world have established correct height for man's work bench. Why should not the woman's work bench—her kitchen table—have the same consideration? The members of the class not finding any table on the market the correct height, had one made to order.

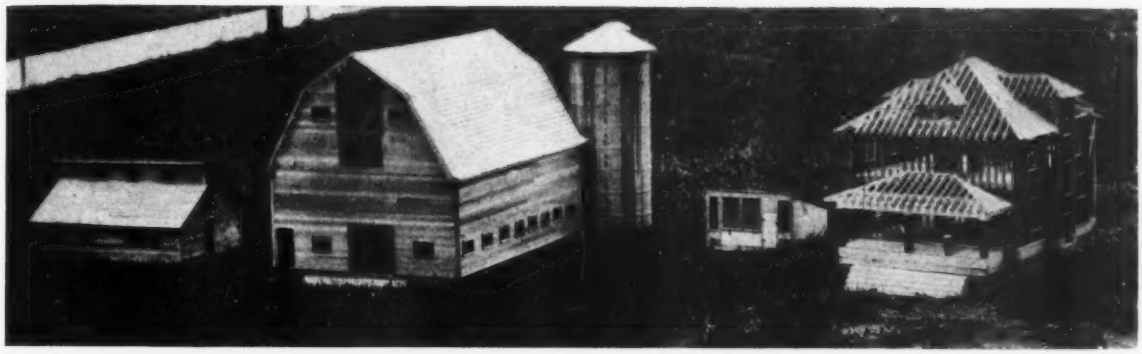
Efficiency in our Efficiency House meant freedom for the young son, whose room was arranged with unpolished, durable furniture, with simple unbleached muslin curtains appliqued with gay oil calico that would stand hard use and many washings. The table was substantial, could be hammered upon, and could not be injured by marks of any mechanical or electrical contrivance. There was a wall-rack for his Indian clubs, tennis racket, and baseball bats, and a set of bookshelves with such books as would satisfy his fancies. It was indeed a "boy-proof" room.

A CORNER IN THE KITCHEN CF THE HOME SHOWING THE KITCHEN CABINET.

The effect of the problem of the Efficiency House upon the class as well as upon the entire community can not be measured. Hundreds of visitors came daily for ten days. They came with note books and pencils. Their many questions showed with what earnestness and seriousness they approached the problem.

The story of the Efficiency House would not be complete without acknowledging the gratitude of the class and its sponsors for the generous help of the business men who built and loaned us the house, and for the hearty co-operation of twenty merchants of Indianapolis who loaned us furniture, rugs, kitchen utensils, dishes, silver, every kind of electrical equipment, including toaster, percolater, vacuum cleaner, sewing machine, washing machine, mangle, and iron. We were also indebted to others who loaned a collection of books for a well-selected library and for the beautiful paintings which added much to the dignity of our house. Not only the actual physical aid but the moral support and sympathy of these broad-minded business men made it possible for us to accomplish in a finer way than would otherwise have been possible the task we set out to perform.

House planned and built by Students in the High School, Ames, Ia., under the direction of Mr. Wm. Giese, instructor in architectural drawing and carpentry. See page 479.



COMPLETED MODELS MADE BY STUDENTS FROM PLANS PREPARED FOR FULL SIZE BUILDINGS.

Agriculture Correlated With Manual Training

Wm. Giese, Ames, Ia.

THE following is an account of an experiment conducted recently in the Ames public schools. The purpose of this experiment was two-fold. First, to develop some plan of correlation between the agricultural and manual training work and second, to give some practical experience in building construction.

The work was begun in the agricultural classes. Buildings of proper size and style for a 160-acre general purpose farm were studied. From the data furnished, the boys in the manual training department worked out a suitable design and the constructive details for the same. After these were fully developed, the boys of the class were divided into groups, each of which undertook the construction of some one building.

In keeping with the purpose of the experiment, the principal buildings found on the better class farms, namely poultry house, hog house, silo, general purpose barn, and dwelling house were selected for this purpose.

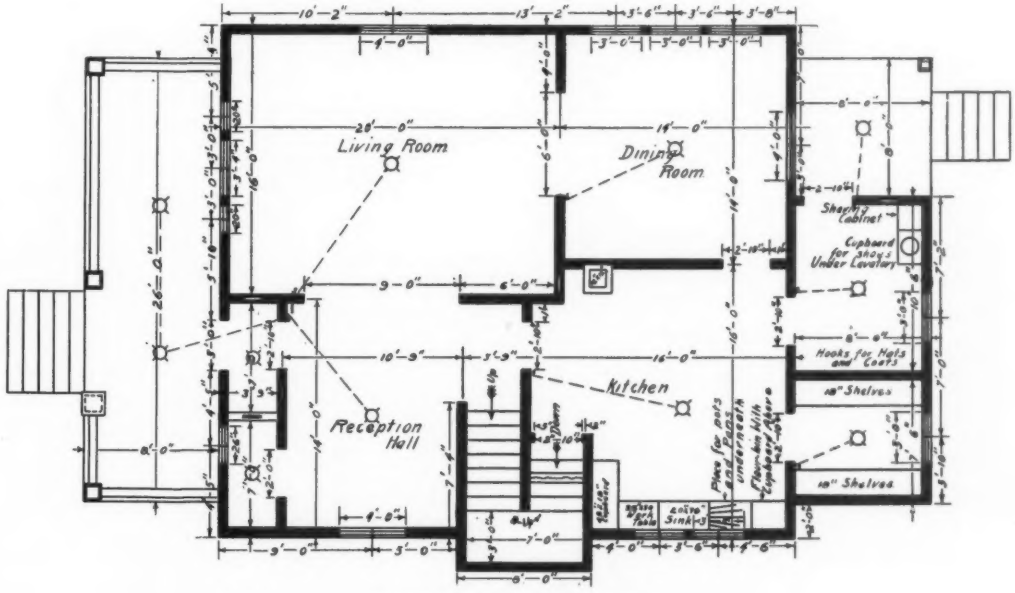
These were all constructed in the usual manner and to a uniform scale so that the relative size would be evident. The scale of one inch equals one foot was adopted as being the one most convenient.

The following descriptions together with the accompanying photograph and drawings will give some idea as to the scope of the work.

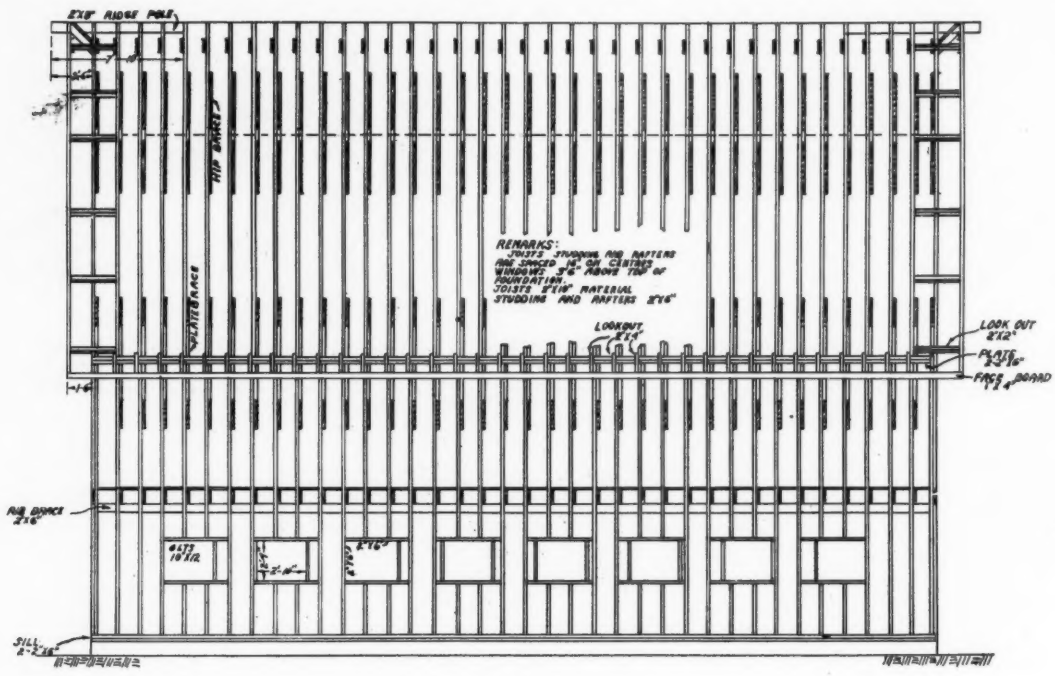
The poultry house was made 14 feet by 18 feet and framed according to the design thought best for the general purpose farmer.

The hog house was made 20 by 32 feet and framed according to design selected in the same manner as the design of the poultry house.

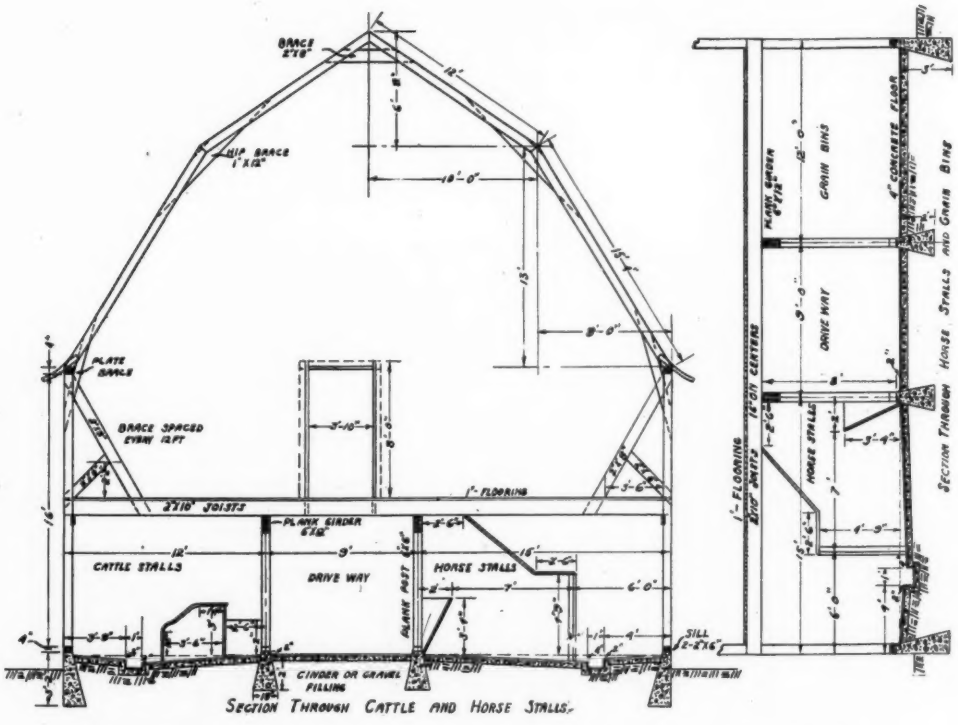
The silo was of the stave type, 16 feet in diameter



FLOOR PLAN OF FARM HOUSE.



SIDE ELEVATION OF BARN.



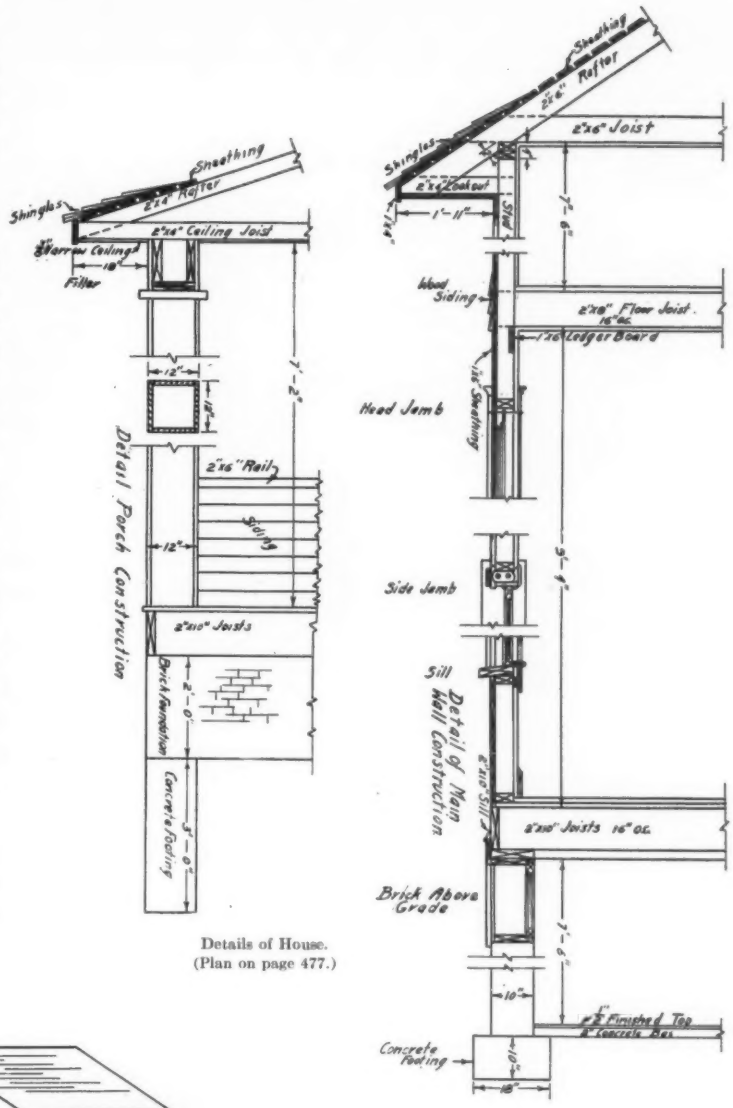
SECTIONS OF BARN DESIGNED BY STUDENTS IN MANUAL TRAINING DEPARTMENT, AMES HIGH SCHOOL.

by 36 feet in height. It was built of 48 staves tongued and grooved together. Eight doors were hinged on and the ladder placed to one side of them. The roof and dormer were framed in the usual way, sheathed and shingled.

The general purpose barn was designed to suit a farm of 160 acres. Local conditions were studied and other designs worked over. The barn, which is 36 by 50 feet, contains twelve horse stalls, six cattle stanchions, a calf pen, three grain bins, a large driveway and feed floor, and will hold approximately 75 tons of hay.

The house is 30 by 34 feet, full two story, of the hip-roofed type. It contains eight rooms, bath and sleeping porch and is of modern construction thruout. It was designed and drawn by one of the boys who was selected as architect. That is, after he was given the outside dimensions and general arrangement, he worked out carefully the plans, elevations, specifications, and bill of materials and acted as inspector during the construction of it.

This class of work, altho it has the disadvantage of working with small numbers, has the advantage of small comparative cost, a completed project and the experience gained from making not simply an isolated part but several parts in their proper correlation.



Details of House.
(Plan on page 477.)

Front Elevation of House.

Following this work, the boys carried the work from the scale to the full-sized projects. A poultry house was made suitable for 24 hens.

The next step was the construction of a small house.

Great interest was shown in the work at all times. Since the work began as an experiment in correlation, it was thought advisable to limit the work to those members in the class who were taking both the agriculture and manual training but this was waived to allow the remainder of the class to take part.

REPAIRING CHRISTMAS TOYS

Harry R. L. Chellman, Pittsburgh, Pa.

A UNIQUE method of providing the poor children of one of the city's districts with toys for Christmas was carried out very successfully at the Washington Industrial School, Pittsburgh, Pennsylvania, by Harry R. L. Chellman and Dana Z. Eckert.

Superintendent of Schools William M. Davidson took an active interest in this work and furnished Mr. Chellman with an introductory letter which he presented to the managers of the various stores including five and ten-cent stores, department stores and toy shops. He solicited damaged and broken toys and games which are always found when the great packing cases are opened, or which are broken on the sales counters.

The managers of many stores showed their approval of the scheme by donating all the damaged toys and games available with the result that over five hundred toys including monkeys, jumping jacks, mechanical ducks, horses, dogs, wagons, dolls, doll beds and chairs, jacks-in-the-boxes, horns, automobiles, in fact all kinds of toys, were gathered together and brought to the school in various stages of dilapidation.

The pupils of the fifth, sixth, seventh and eighth grades were wildly enthusiastic over the idea of actually repairing real toys that formerly sold in stores and were as proud of doing the work as if they were owners of their own toy shops.

At least ninety per cent of the toys received were repaired, so that about five hundred good, substantial gifts were ready for distribution at Christmas.

Not only were old toys repaired but several hundred new ones were manufactured by the several grades, such as bears, owls, giraffes, ducks, elephants, and rabbits, all gayly colored and mounted on brightly painted platforms with beautifully decorated wheels.

"The Violin Expert." Fifth Grade Boy, Washington Industrial School, Pittsburgh, Pa.

Miniature furniture, all perfect in detail, was another feature with the fifth grade, a four-room house being completely furnished as follows:

Living Room—Piano and bench, victrola, book case with swinging doors, library table, rocking chair, morris chair, clock and pictures.

Dining Room—Round pedestal dining table, dining chairs, buffet, easy chair and plate and cup rack.

Bed Room—Bed, cradle, chairs, table and dresser with revolving mirror.

Kitchen—Stove and pans for cooking, refrigerator, kitchen cabinet with four swinging doors, table, chairs, and even sink with faucets, broom and alarm clock.

These were all made of wood, artistically designed and tastefully decorated. The toys were all distributed before the Christmas holidays in the following manner to avoid all appearances of partiality:

First all gifts were numbered and a duplicate set of numbers placed in a box. The pupils came into the room in single file, each one taking a number from the box which entitled him to the toy with the corresponding number. Student assistants helped in the distribution.

The whole scheme worked out so satisfactorily that it will be undertaken

An Armful of Toys, Washington Industrial School, Pittsburgh, Pa. Harry R. L. Chellman, Instructor.

another year on a larger scale, and as early as March, 1917, about one thousand toys had been received from the stores for use next Christmas.

This is the first time this experiment has been worked out in Pittsburgh and as far as known it has been done in very few, if any, other cities.

A HIGH SCHOOL CHRISTMAS PROBLEM

Beatrice Cannon, Chicago

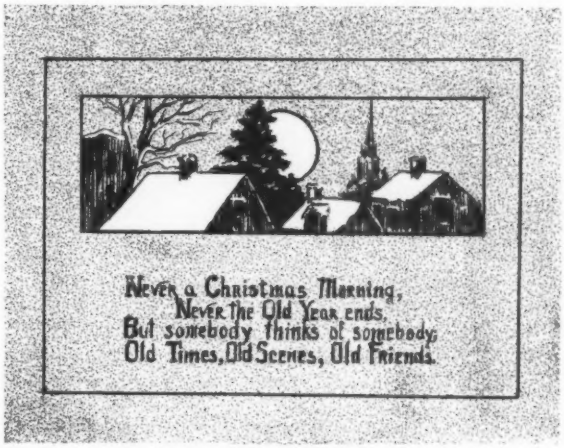
THE purpose of this problem was to give a timely and interesting application of the theoretical and technical study of the classroom. This particular class had been making window sketches in various media, both at school and at home, and had also been having a limited amount of figure posing. Therefore the making of Christmas cards was planned to give interest to the further use of the material accumulated —these to be executed in both black and white and color.

Our method of procedure was:

Card designed in the Author's Classes.

First—Simple representation, the rendering of fragments of what could be seen from the windows, with necessary study of form, value, perspective, etc.

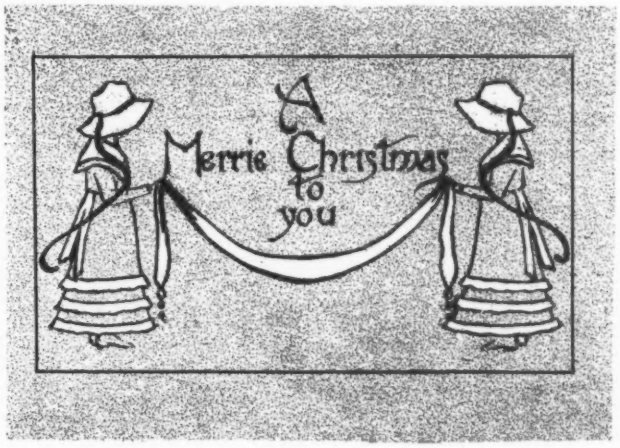
Second—There came the study of composition—arranging the same material in spaces of various shapes, making the necessary changes to adapt it to each. Thus by simplifying, eliminating, and occasionally adding an item, the final arrangement was reached.



Original Card measures 6¼" by 5¼".

The third step was the translation of the pictorial composition into decorative terms. Many experiments were tried in this part of the work;—the flat, mosaic-like rendering of the various masses in their original spaces; the exaggeration of some one feature, and the relative repression of others, thus making the decorative center of most immediate effect; and sometimes trying slight rearrangements to give prominence to some decorative sweep of line.

Finally came the study of color. The color prints of Jules Guerin and Maxfield Parrish were carefully studied as examples of restrained, yet brilliantly effective, color schemes. These greatly aided criticisms and corrections of crude attempts.



A Simple Card.

Reviving the Lost Art of Wooden Ship Building

Richard M. Van Gaasbeek, School of Science and Technology, Pratt Institute, Brooklyn, N. Y.

THE pressing need for ships to carry supplies across the Atlantic, the inadequate supply of skilled men for the different ship building avocations and the decree that the lost art of wooden ship building must be revived is giving to trade and technical schools thruout the country an opportunity to assist in their small way to restore this industry as a national service.

Pratt Institute undertook to offer several courses that would train men for service in the building of a merchant marine: A course for ship draftsmen, one for marine engineers, one in ship calculations and one in ship and boat woodworking. This article gives an outline of the last mentioned course.

The course was first advertised about the fifteenth of August with the idea in mind of giving to house carpenters and other skilled woodworkers a practical understanding of wooden ship and boat building, with a view to helping such men to become competent workers in the great shipbuilding industry, rapidly developing in this country. The course was open only to experienced woodworkers in the trades mentioned and was intended for men just before or just after they had transferred to ship work. An advanced course of instruction was offered to experienced ship woodworkers who wished to broaden their knowledge of modern ship and boat building practice.

The announcement of this course was well received—65 men immediately applied for admission. Twelve men were selected from this group for the initial class and began work on Thursday evening, September 6th. Twenty-four men were added to this group on September 20th, making in all a class of thirty-six men under the care of two instructors. Twenty-four of the men selected were already working in shipyards and the balance of twelve men were carpenters expecting to transfer to the ship building industry in the near future.

Mr. Joseph F. Reardon, master boatbuilder in the Brooklyn Navy Yard, was invited to organize the class and accepted, but the demands upon his time at the yard became so great that he was unable to continue as an active instructor and Mr. Charles Rassiga, Jr., and Mr. Edward Weber, both employed in the Brooklyn Navy Yard, assumed charge of the class, carrying out many of the ideas suggested by Mr. Reardon.

The outline of instruction as planned consists in practical work of taking up molds from mold loft floor, lining scantling from molds, construction of center frame, including stem, keel and stern, cutting

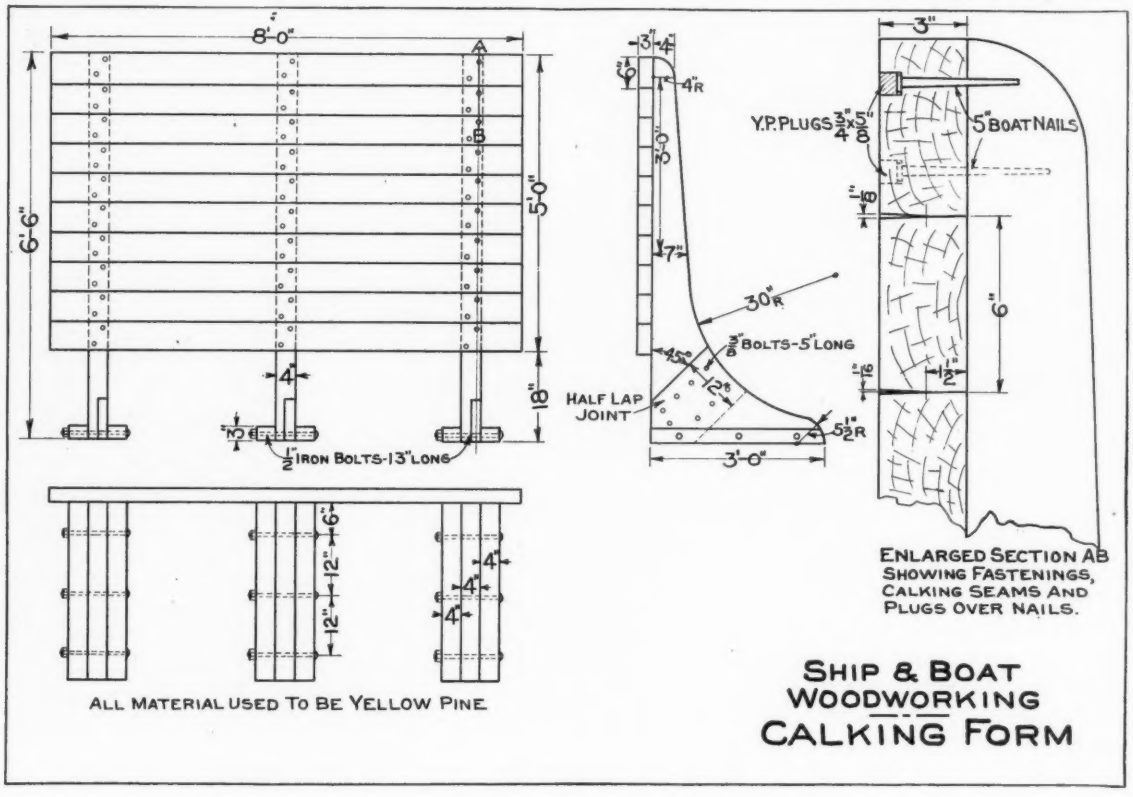
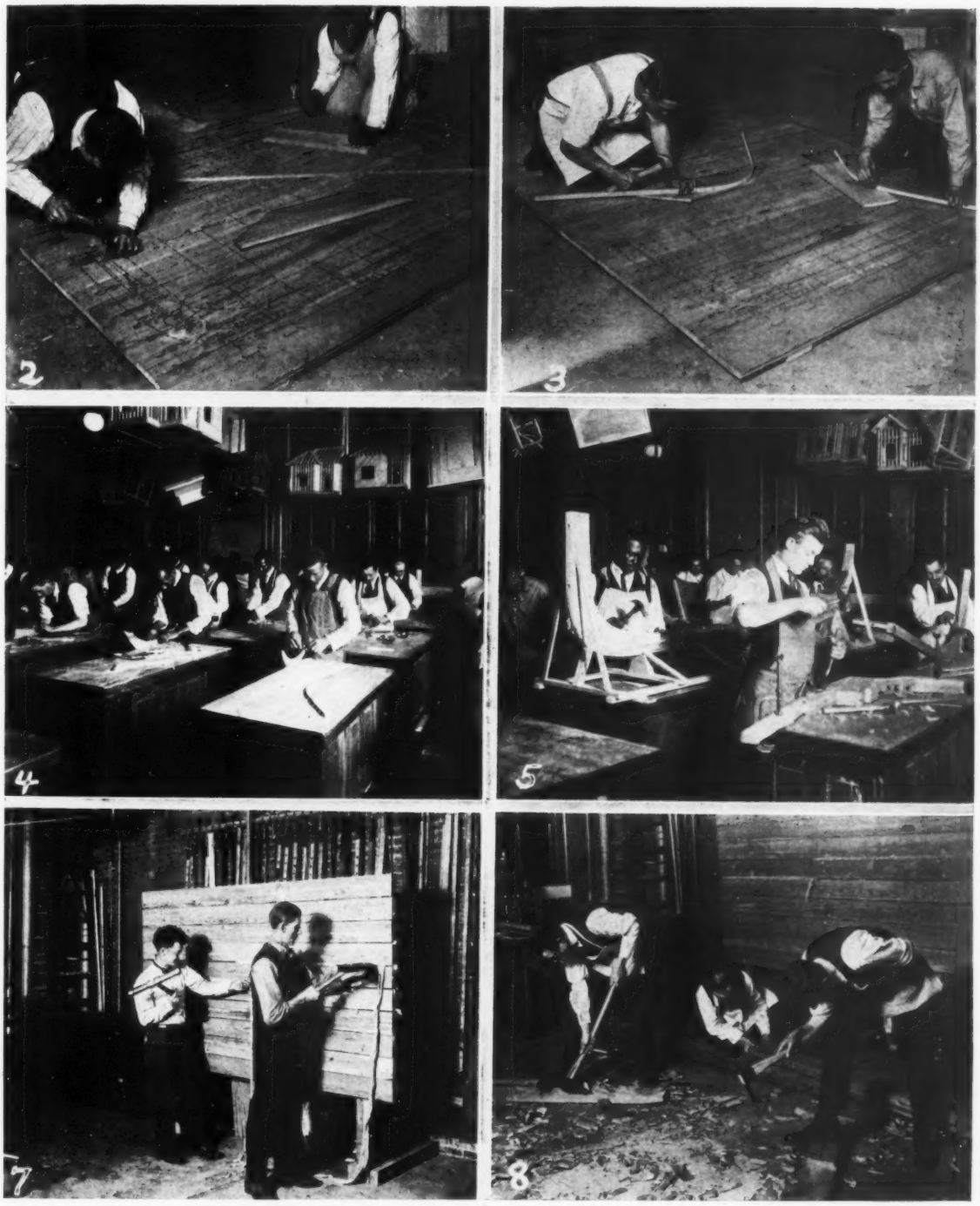


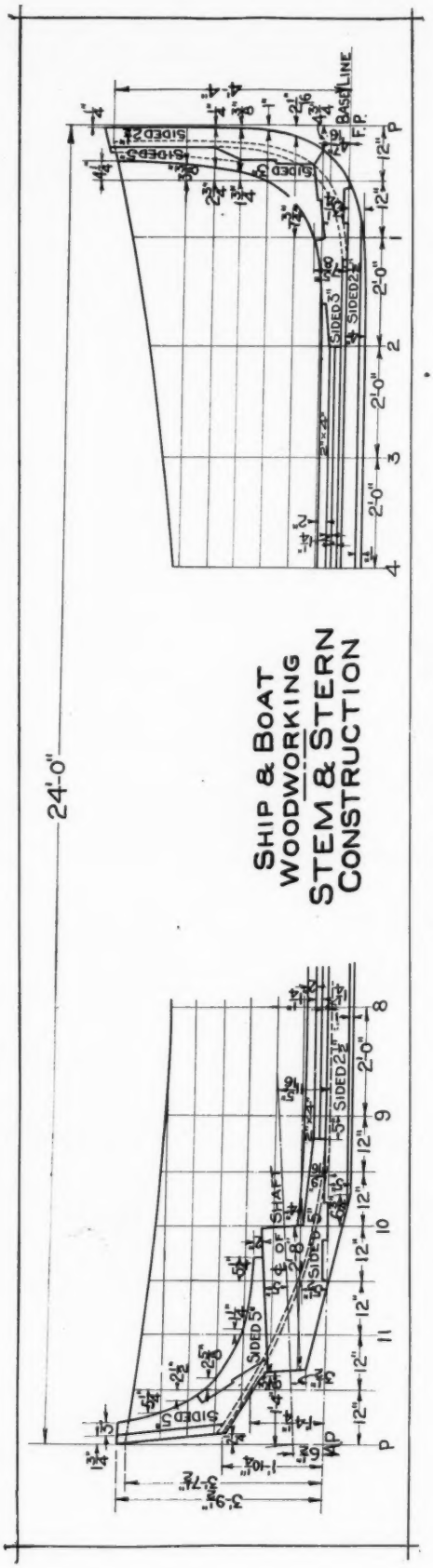
Fig. 6. Detail of Ship Calking Form.



2—Picking up Lines from Mold Loft Floor. 3—Bending Battens. 4—Fairing up Molds. 5—Cutting Rabbets, Fitting and Fastening Parts of Stem and Stern. 7—Practice Calking. 8—Scarfing Timbers with an Adze.

rabbets, erecting transverse frames, scaling, beveling and installing planking, scarfing of planking and longitudinals, calking (light and heavy work), installation of longitudinal clamps, deck framing, method of laying decks and plan reading.

Before a man can lay down the lines of a ship on the mold loft floor, he must know something of the construction of a ship and be able to read plans. Under the circumstances it seemed advisable to start the class on a model of a small boat rather than a large type ship, because the lines of the larger type are very complicated and would be beyond the understanding of these men. Laying down the lines of a wooden vessel on the mold loft floor involves a


SHIP & BOAT
WOODWORKING
STEM & STERN
CONSTRUCTION
24'-0"
BASE LINE
F.P.
A.P.
SIDED 2½"
SIDED 5"
SIDED 2"
SIDED 2½"
SIDED 5"
SIDED 5"
SIDED 5"
SIDED 5"
SIDED 2½"
SIDED 5"
SIDED 5"
SIDED 5"
SIDED 5

We are trying to give to house carpenters and other woodworkers the necessary confidence in their own ability that they may enter their new field of activities with some degree of assurance and not be afraid of the task set before them.

Full size timbers are used in the shop where it is practical to do so. A boat is constructed in sections rather than a complete model, thus avoiding a repetition of many processes and yet giving all the fundamentals of boat and ship construction. In order for a mechanic to understand his foreman and be able to take orders and carry them out, or to be a leading man and give directions, he must be acquainted with ship terminology. For this purpose a study has been made by the class of the Ferris type cargo carrier, a plan giving complete details of construction, showing the timbers in their relative position, giving the technical names and sizes of each. Other data not shown on these plans have been compiled and furnished to each student in the form of mimeograph copies.

These photographs show only the progress of the class up to the time of the present writing. The men are now beginning to lay down the half-breadth and body plan on the mold loft floor, and later on will pick up their bevels, shape and install planking, etc. There is now a waiting list of applicants for this course and it is probable that a new class will be admitted about January 2, 1918.

By request the following list of hand tools required for boat building and ship carpentry trades was compiled:

Claw hammer	Draw knife
Cross cut saw	Calking irons
Rip saw	Calking mallet
Pannel saw	Wood rasp
Compass saw	Oil stone
Ball pean hammer	Cold chisel
Adze (lipped)	Cape chisel
Spirit level	Spoke shave
Bevel (ship carpenter's)	Ratchet brace
Plumb bob	Steel square
Auger bits $\frac{1}{4}''$ to $1''$	Try square $7\frac{1}{2}''$
Extension bit	Compasses
Smoothing plane	Hack saw
Jack plane	End cutting pliers
Fore plane	Marking gauge
Bilge plane	Wood chisels $\frac{1}{4}''$ to $2''$
Compass plane	Burr set
Baller plane	Pinch bar $20''$
Wood reamers $\frac{1}{4}''$ to $1\frac{1}{2}''$	Slice chisel $2\frac{1}{2}''$
Wood gauges $\frac{1}{4}''$ to $2''$	

ROOF FRAMING

H. T. Wilhite

(Concluded from November)

Fig. 13 shows the right triangle abD, which gives the plumb and heel cuts of a common rafter. Draw the line cd parallel to ab to represent the thickness of the rafter. Square across from a to c; on the line Db set off De equal to the thickness of the rafter

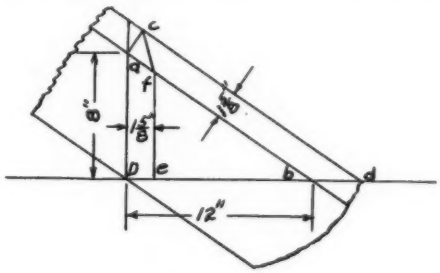


Fig. 13.
From Building Age
September 1916

and draw the line ef parallel to aD. Connect c with f; then the line cf is the cheek cut for jack rafters. Set a bevel to the angle formed by fcd.

Fig. 13 shows a graphic method of finding the side cut of a jack.

Fig. 14 shows a quicker and easier method by using the square, as the cheek cut is laid off on the rafter.

Fig. 14: Mark plumb cut AB. Square CD from AB equal to thickness of rafter. Mark another plumb cut EF thru D. Square EG across the top of the rafter. Connect AG, which is the cheek cut of jack.

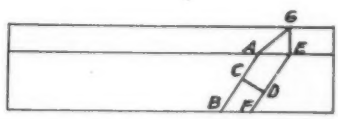


Fig. 14.

Fig. 15 shows another method of finding the length of cheek cut of jacks. Draw a right triangle by tacking one-half span for the base. Length of common rafter for altitude and length of hip rafter for hypothenuse. The angle A is the side cut of jack.

Fig. 10 shows one method of finding cheek cut of hip.

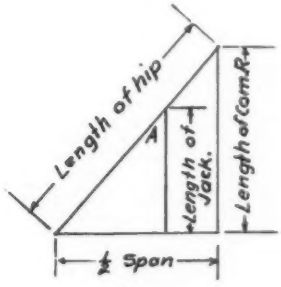


Fig 15.

Referring to Fig. 14, the cheek cut of a hip may be found by making the plumb cut AB the plumb cut of a hip. Proceed as in Fig. 14.

Fig. 16 shows a graphic method of finding the cheek cut. The right triangle gives the plumb and heel cuts. Lay off eg for thickness of rafter, and ml

the center line parallel to ef. Square across ge. Lay off Aj equal to half the thickness of the rafter. Draw iJ parallel to eA. Thru m draw ih, which is the cheek cut. Set bevel to angle ghi. (See Building Age, Sept., 1916.)

The length of a hip may be found by draft as illustrated in Fig. 9 or by the use of the square in a

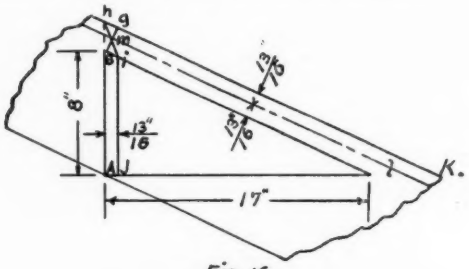


Fig. 16
From Building Age
September 1916

manner similar to the method used in Fig. 5 to find the length of a common rafter.

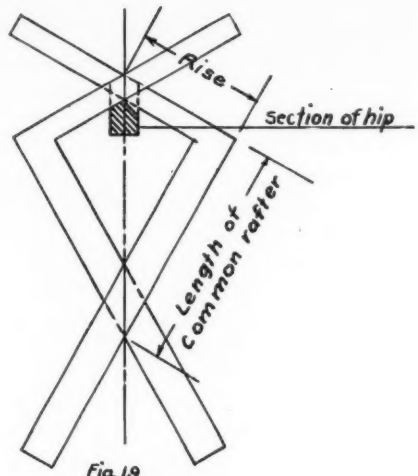


Fig. 19
I. L. T. Vol. 30B

In Fig. 17 the run is the same as the common rafter in Fig. 6. Step off twice with the square, using

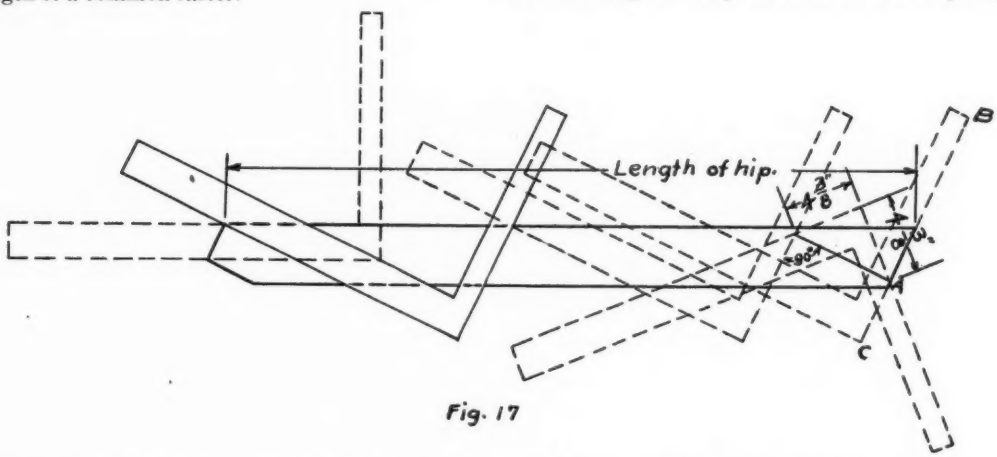


Fig. 17

In stepping off the common rafter, the rise on the tongue and the run, 12″ on the blade (which is constant), is used.

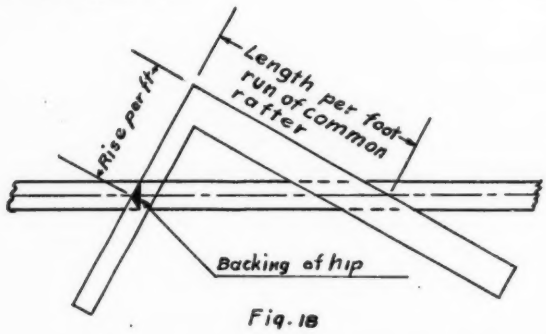


Fig. 18

For finding the length of a hip, take the rise on the tongue, and the run, 17″ (also a constant), on the blade. If the run is even feet, use the rise and run (17″) to find the length, as in common rafter. (Fig. 5.)

In Fig. 6 the run of the common rafter is 2′ $4\frac{3}{8}$″. A hip rafter for the same roof has the same run. 8″ and 17″. This gives the length for a run of 2′ 0″. There is left a run of $4\frac{3}{8}$″.

As the seat of a hip is the diagonal of a square, a line equal to the diagonal of a square $4\frac{3}{8}$″ must be drawn perpendicular to the plumb line at the end of the 2-foot run.

Thru A, draw BC. Deduction must be made from the length of a hip equal to the diagonal of a square, whose sides are equal to one-half the thickness of the ridge.

Theoretically a hip should be backed and a valley grooved, but this is rarely done in practice. If a hip is backed it must be beveled to lie even with the planes of the roof. This bevel must slope from the middle toward each side. It may be found by taking the length of the common rafter on the blade and the rise on the tongue. Figs. 18 and 19.

Fig. 20 is a graphic method of finding the backing of a hip. Let AB= seat of hip, BC= rise, and AC= length. From any point D on AC, draw DE perpendicular to AC. Set off EF = ED. Thru E draw

GH perpendicular to AB. Draw FG and FH. Lay off thickness of hip with AB as center. IFJ is the backing of the hip.

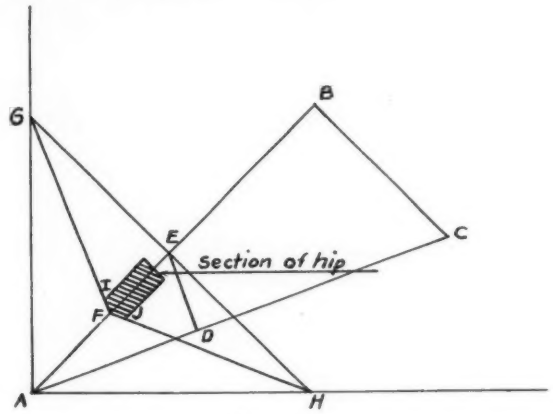


Fig. 20

It is unnecessary for a hip to be of heavier material than the common rafters, as the jacks and sheathing brace it. It should be supported while nailing jacks in place to keep it from sagging, if the hip is long. A hip should be straight edgeways as well. This may easily be done by stretching a chalk line in the center from the top to the heel. Raise the line by placing small blocks under each end of the line. Put up jacks in pairs.

Fig. 21 is a mechanical drawing showing how to frame the bottom end of a hip rafter if an open or railroad cornice is used. The heel should be framed as previously described, by laying the blade of the square along the side and marking along the edge. After the heel is framed, lay the tongue along the side and draw a line. Cut out above this line. The hip lookout is framed to fit, by leaving $1\frac{1}{2}$" on the top side.

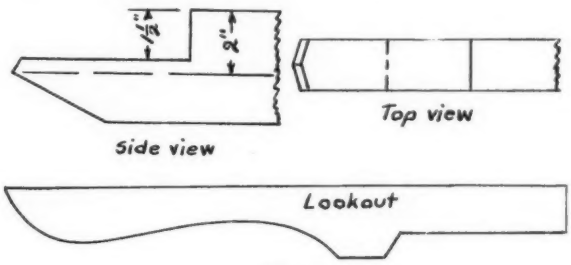


Fig. 21

The cheek cut of a valley is the same as a hip and may be found in the same manner.

Note: The carpenter from whom the writer learned this method gave the names "New Valley" and "New Ridge," as he could not think of better names.

Fig. 22 shows a graphic method of finding the length, plumb and heel cuts of a valley. (The cheek cut may be found in the manner as the cheek cut of a hip.) The length and cheek cut of a cripple. The length of a valley may be found with a square as illustrated in Fig. 17 for finding the length of a hip.

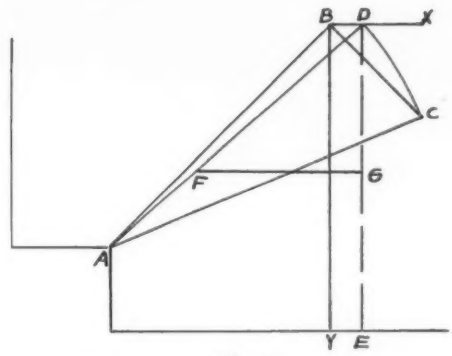


Fig. 22

AB=Seat of valley.
BC=Rise.
AC=Length of valley.
BAC=Heel cut.
BCA=Plumb cut.
BY=Ridge.

Draw BX perpendicular to BY.
Swing C to D.
AD="New Valley."
DE="New Ridge."
GF=Length of cripple.
DFG—Cheek cut of cripple.

If a valley is grooved, the sides of the groove must be in the same plane as the cripples on each side. The top of the cripple will be flush with the top edge of the valley.

When the valley is not grooved, the cheek of the cripple must be raised above the edge of the valley a distance equal to the depth of the groove, if the valley were grooved. The groove of a valley is the same as the backing of a hip reversed.

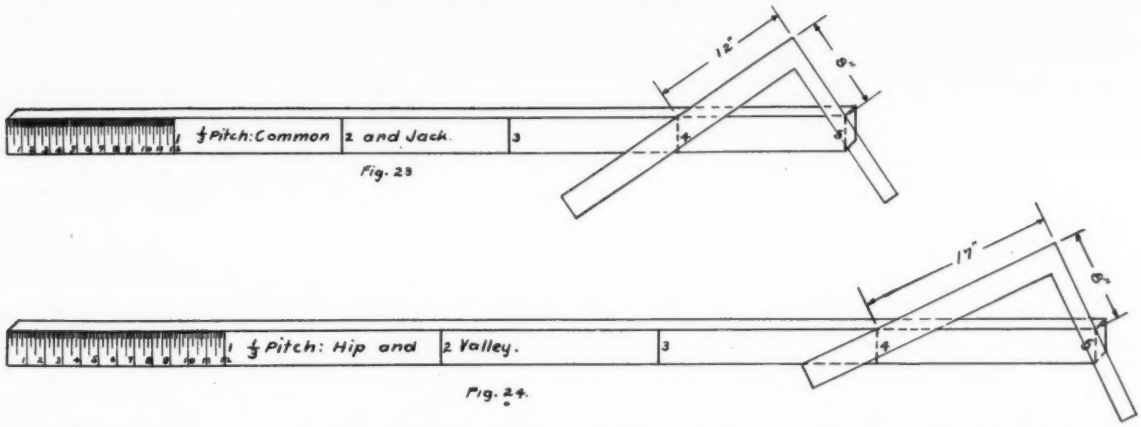
The plumb cuts of a valley, hip, jack and common rafter are the same when the valley is grooved, but the valley must be lowered a distance equal to the depth of the groove (or backing of a hip) when the valley is *not* grooved. Frame the heel of the valley like the hip and cut off the amount required parallel to the level cut at the heel. If this is not done the valley will be too high. Always measure for length in center.

Unless a valley is short, or is supported by a shore or partition, it should be heavier material than the common rafters as it has to support the cripples, sheathing, shingles and snow load. (See Building Age, Aug., 1916.)

In discussing the question of the various materials which are best adapted to different pitches of roofs a writer in a recent issue of the Contract Record says: "It is extremely important that a roof material be adapted to the pitch of the roof.

"There is a certain limitation in this regard to the use of all roof coverings. Thus, roofs of slate, tile, unsoldered tin, etc., are used only on sloped roofs, whereas gravel and tar are applicable to flat roofs exclusively.

"If the pitch and the material are not properly related, leaky roofs are sure to result. The following table gives the desirable slopes that may be safely used with the roofs mentioned."



Material.	*Rise of Roof per Foot.*
Wooded shingles	6 inches
Slates	6 inches
Tiles	4 to 7 inches
Corrugated iron	4 inches
Asbestos shingles	3 inches
Tin plate	1 inch
Concrete	Flat
Tar and gravel	$\frac{1}{2}$ inch
Asphalt	$\frac{1}{2}$ inch
Ready roofing	1 inch

Any roof with equal pitches may be framed by using the preceding methods. However, there is an easier way which has been used by the writer for several years. It takes the place of the steel square in finding the lengths of the rafters and in making deductions for the thickness of the hip, valley and ridge. Instead of stepping off with the square as shown in Figs. 6 and 17, the foot run for common, jack, cripple, hip and valley rafters is done with rods. (A parting strip is good material for these.) For convenience in measuring, make both common and hip and valley rods five runs per foot long. Figs. 23 and 24. One foot at one end of the rod is divided into twelve equal parts, and these are subdivided into halves, quarters, and eighths as inches are on the square. It is not necessary to divide into sixteenths as a sixteenth can easily be guessed, if needed. Figs. 23 and 24 represent the true lengths of a common and hip rafter in which the run of the common rafter is 5′ 0″.

Hereafter we shall call the distances on the rod (each one of which is the hypothenuse of the rise and the run) "feet."

Suppose a rafter has a run of 7′ $5\frac{3}{8}$″. Measure 5′ 0″, then 2′ 0″, then $5\frac{3}{8}$″, using the common rafter rod for the common rafter and the hip and valley rod for the hip. If there is a ridge, deduction must be made.

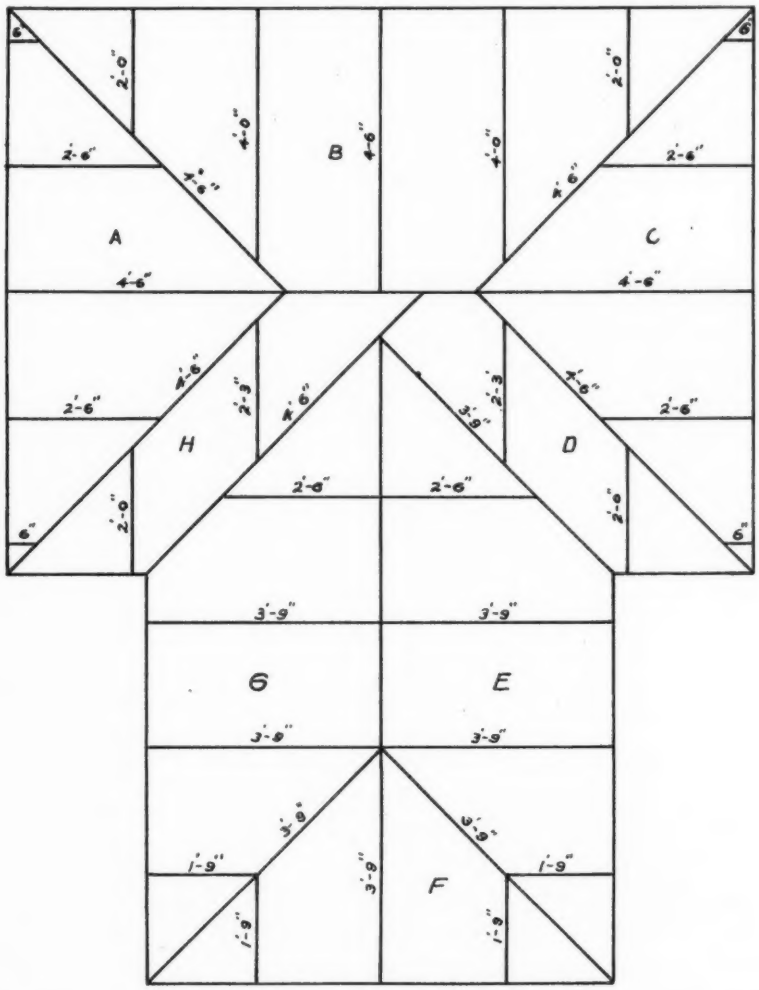


Fig. 25
Typical Roof.

In each case, deduct one-half the thickness of ridge, using rod.

Deduction must be made from the length of the jack, a distance equal to the diagonal of a square, the sides of which are equal to one-half the thickness of the hip. Find the diagonal as shown in Fig. 12 and use the same figures, measuring with the rod.

This distance will rake or slope over the horizontal diagonal as shown in Fig. 11, at the top end of the jack.

Note: When using rods, make all deductions on the top of the rafters and not on a line perpendicular to the plumb cuts as when using the square.

Rods Must Be Made for Each Pitch.

Write the following notes on common rafter rod to avoid mistakes. For common rafter, deduct one-half the thickness of the ridge; for jack, deduct the diagonal of a square whose sides are equal to one-half the thickness of the hip.

On the hip and valley rod, write the following:

For ridge, deduct one-half thickness.

Note: The above applies to valley cripples and cripples from hip to valley.

Rules.

Common rafter rod.

1. Measure length and deduct for one-half the thickness of the ridge.

2. For jack, measure length and deduct one-half the thickness of the hip as explained above.

3. For valley cripple, deduct for one-half the thickness of the ridge, also one-half the thickness of the valley. (If several are to be framed, the two measurements may be added and deduction made in one measurement on those remaining.)

4. For cripple from hip to valley, deduct for both.

Hip and valley rod.

1. For hip and valley, deduct one-half thickness of the ridge, using this rod.

Fig. 25 shows the plan of a roof, scale: $\frac{1}{2}'' = 1'\ 0''$. The run of each rafter is given. By using the rods according to rules, the correct length of each rafter may be found. The seats of the valleys $4'\ 6''$ and $3'\ 9''$ are perpendicular to each other. One-half the thickness of the long valley must be deducted from the length of the short. This is the actual measurement with the square on a line perpendicular to the plumb cut.

Any pitch roof may be framed from the same plan by using rods for that pitch.

Letter each rafter the same as the section in which it belongs and distribute accordingly when ready to put up roof.

MAKING A CHILD'S RING

H. R. Sorensen, De Kalb, Ill.

SOME very attractive pieces of jewelry can be made for children, especially girls. We shall discuss as an example, a girl's ring containing a stone.

Ring number one in the accompanying plate was made by the author and will be explained in detail. It was made to fit the third finger so that it might be used later as a fourth finger ring. The problem will be discussed assuming that the reader is somewhat familiar with the making of craft jewelry and understands that all ideas are first sketched on paper, drawn accurately and then traced on a piece of tracing paper.

Making the Bezel.

The stone used was a faceted garnet. Faceted stones present a greater problem in bezel making than smooth cut stones (cabochon) but are really easy when several have been made. By using a piece of thin bezel material, about one-eighth of an inch wide, the bezel is made. The material is fitted around the stone and cut off so that both ends meet. To facilitate the work, place the stone on the bench, the top of the stone resting on the bench. This position will tend to keep the stone resting better and enables one to easily fit the material around it.

After fitting the material so that the ends meet perfectly, the joint should be soldered by placing the bezel on a charcoal block, applying borax solution and a small piece of solder directly on the joint, gradually heating the same until the solder has fused and the joint is connected.

After the soldering, the bezel should again be fitted on the stone to ascertain if the fit be perfect. It will be necessary to have a bearing in this bezel on which the stone will rest. This is accomplished

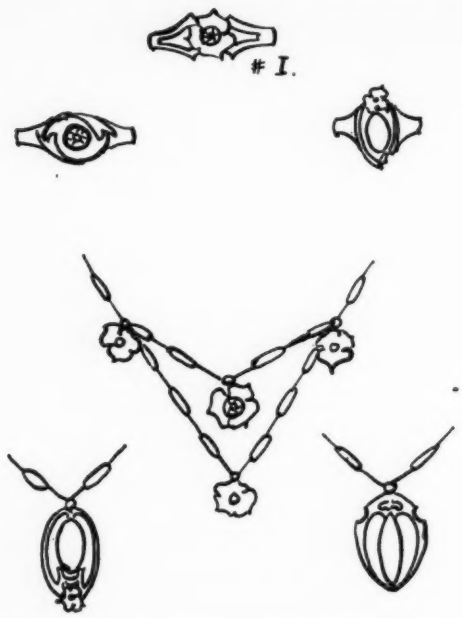
Fig - A

Fig - B,

by making a smaller bezel, which should fit snugly inside of the first bezel and low enough so that when the stone is placed, it will rest as shown at Fig. B.

Making the Shank.

The transparent tracing paper with the outline of the shank is placed on gauge 18 metal; the outside edges are then carefully traced. A piece of carbon paper should be between the metal and the tracing paper. One must allow enough material to enable it to be curved and shaped to fit the finger. The sawing should be done carefully. After the sawing the shank is shaped by placing it on a lead cake having a concave depression so that by placing the ring mandril on the blank and striking it with a mallet, the



blank will curve into shape and the ends will be forced together. A perfect connection should be made by filing the ends. An application of good, thick borax and a piece of solder put on completes the preparation for soldering.

Good results in soldering can only be obtained by having joints free from all foreign matter. The connection should be scraped bright before attempting to solder. The ring can be held in a pair of tweezers, or placed on the charcoal, heated until the solder flows and the joint is connected. Following this the ring is placed on the mandril and made perfectly round by tapping it with a rawhide mallet.

Making the Flower.

The flower which forms the ornament of the ring is made of stock, gauge 22. The design is traced on this stock and sawed out very carefully. The flower is placed upside down on the lead cake and the petals are dapped up quite high by placing a rounded punch on the reverse side and striking with a hammer. The center should be forced quite high.

The center is then cut out large enough to permit the bezel to fit in snugly. The bezel should project over the edge of the cut out just so as to leave enough to set the stone securely. It is then soldered to the flower by placing small pieces of solder around the outside of the bezel touching the flower. The top of the ring shank is filed as flat as possible, to make it easier to fit the flower to the ring proper. If the bezel projects thru the flower too far, it should be filed off or cut away.

When the flower has been fitted to the ring as well as possible, it should be soldered to the ring. If after the first soldering it does not fit well enough it should be forced down to the shank and soldered again. It should have the appearance of one solid piece, not as tho it were soldered on top.

After all soldering has taken place, the ring should be immersed in diluted sulphuric acid solution until all hard borax has been removed. After it is taken out the ring should be rinsed thoroly. All edges can now be filed smoothly and finished up to traced lines if any are visible. The edges should then be finished, using emery cloth.

Setting the Stone.

The stone being transparent necessitates cutting out the material inside of the bezel, thereby permitting the light to come to the stone. The stone may be placed in the bezel, resting evenly on the bearing. Notice should be taken that the bezel is not too high or that too much material covers the stone. It may be necessary to file off some of the bezel.

When the right height has been obtained, the bezel is forced over the stone by using a pushing tool and finishing up with a burnisher. After all rough edges are removed, the article is given a Roman finish —if gold has been used, or oxidized if silver was the material.

MAKING SCHOOL FURNITURE

Clarence T. Mudge, Eugene, Ore.

ABOUT two years ago we were fortunate in having bonds voted for a new high school building, to cost $110,000. Last spring when the local school board were discussing the matter of equipment for the new building, Mr. J. K. Moore, clerk of the board, suggested that a considerable part of it might be built in the high school manual training shop during the summer vacation.

The writer was called in on the matter, and the case put up to him in dollars and cents. Could we do the work? Could we save the district money and was our present equipment sufficient? You may be sure that the matter was given careful attention as it meant much to the future of manual training in our city. We talked the matter over with some of the older boys and found them enthusiastic, the idea of a summer job appealed to them. Besides they would be doing work that they liked. Accordingly plans were prepared for the following furniture:

Fifteen teachers' tables, 30″ by 48″, 30″ high, to be made of kiln dried quartered eastern white oak, veneered tops and legs, two drawers 16″ by 20″ with locks, two book shelves extending between the legs at the ends, to be stained, filled, shellaced, varnished and rubbed twice.

Thirty double bookkeeping desks, 24″ by 60″, 30″ high, to be made of kiln dried Oregon fir, with

hard maple tops. To be of the sanitary eight-leg type, with six drawers. To be stained, shellaced, varnished and finished with a coat of "flateen."

Seven hundred and twenty lineal feet, pews, 54 in all, to be made of kiln dried Oregon fir, to be so built that a greater distance than six feet will not occur between supports, to have $1\frac{1}{4}''$ seats, and $\frac{3}{4}''$ ceiling backs. To be stained, shellaced, varnished, and finished with a coat of "flateen."

One thousand five hundred seat tops, to be refinished. To be removed, scraped, plugged, sanded, stained, varnished, rubbed, varnished, and finished with pumice and sweet oil. Desks to be reassembled and unfastened from the floor.

Two hundred and sixty recitation bench arms, to be removed and refinished as with the above tops.

Special, such special work as may be suggested and advised by the clerk, all such work to be done in a workmanlike manner, and finished with a hand-rubbed varnish.

Pews, Teachers' Desks and Commercial Desks made for Eugene High School.

Before beginning the work a 36-inch sanding drum and a veneer press were built by the boys and a 36-inch band saw with re-saw attachment purchased by the board. This gave us a good woodworking equipment consisting of a double arbor saw table, combined planer and jointer, grinder and the usual number of benches with a full equipment of hand tools.

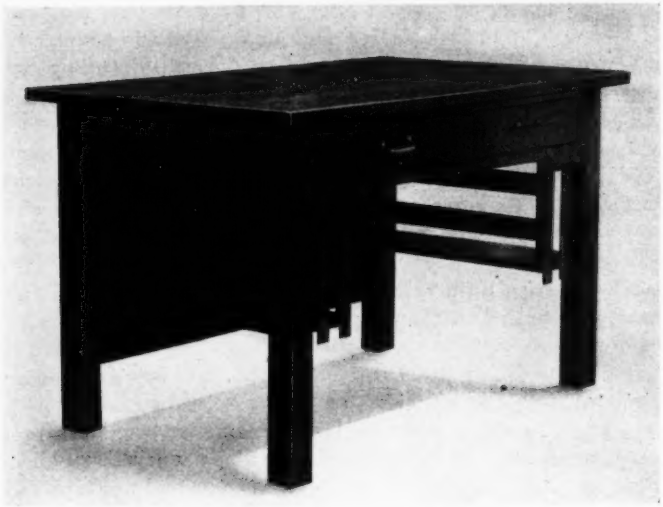
We selected from a group of some fifty applicants, seven boys—one was later discharged and another added. This gave the writer as large a crew as could be conveniently handled in our shop. In making a selection, two boys who were especially careful as well as skilful in the operation of the various machines, were chosen; two who were particularly good in the handling of stain, shellac and varnish. Of the remaining three, two had had a year and a half of shop work and the other one semester. I may add that among the boys chosen there was not one who had been in the shop for more than a year and a half.

After talking the matter over with the boys we decided that the wages should be from $1.25 to $1.50 per day. This was considered a fair wage, by all concerned, and an eight-hour day was decided upon. The boys wished to take advantage of the provisions of the Oregon workingmen's compensation act, and as this met with the ready approval of the board, we made application and were given our charter. On June 10th, we were ready to begin the work as a full fledged manufacturing concern.

At the end of the first week the writer found it necessary to discharge one of the boys for loafing; this, however, was the only case of bad faith during the entire summer. It is certain that the work progressed as rapidly and that there was less "soldiering" than would have been the case had we employed men of greater age and experience. The writer was of necessity absent from the work much of the time, but he found upon his return that the work had always made the progress expected.

Upon completing the work on the high school desks the board was so well pleased with the work that we were given the desks from two more of the grade buildings, some seven hundred in all; these were finished as per the specifications for the high school desks. Under the head of "special" work we built two oak tables, two key cabinets, varnished fifteen teachers' tables, enameled twenty cafeteria tables and repaired about forty chairs.

In figuring the time necessary for completing the work it seems that we had underestimated the capacity of the boys under such conditions. We had thought that eight weeks would be necessary to complete the work; however, we did the entire job including the seven hundred extra desks and the special



Teacher's Desk made for Eugene High School.

work in a little less than nine weeks. The refinishing of the old desks was perhaps the most uninteresting and tedious part of the work. The work on each desk required some twenty-one distinct operations. Aside from refinishing the tops we unfastened each desk from the floor, scrubbed it and gave it two coats of varnish. The tops were taken to the shop where they were scraped with chisels, sanded, edges dressed, holes bored out and plugged, stained and varnished and after being fastened to the desks were rubbed down twice with pumice and oil. Previously the district had paid 26 cents each for refinishing desk tops. With the boys doing the work it cost the district 19¾ cents each and we were told that the work we did was much the better.

The construction of the teachers' tables, commercial tables and pews required very little in the way of hand labor except in the assembling. In making these projects all parts were cut and sanded by machinery. The panels, drawer bottoms, etc., were split from inch stock, using our 36-inch band saw with the re-saw attachment. On this particular item we saved half in the cost, as otherwise the material would have been planed down from inch stock.

Some idea of the size of the work may be gained from the following: We used 50 pounds of glue, fifteen gallons of stain, twenty gallons of varnish; the commercial desks required 240 legs, 630 panels, 180 drawers and as many drawer pulls. The teachers' tables required 300 feet of $\frac{1}{8}''$ veneer, 30 drawers with locks and pulls and 75 oak panels. In making the pews we used 2,000 feet of 2″ fir, 2,000 feet of ceiling, 900 feet of $1\frac{1}{4}''$ stepping and 800 lineal feet of three-quarter round.

As already stated we finished the work ahead of our schedule. In the matter of cost we saved the district some six hundred dollars over the lowest planing mill estimate and this includes the writer's salary as superintendent of the work. Better still, it demonstrated beyond the possibility of a doubt, the practicability of manual training as taught in the most of our high schools. To the supervisor, the summer was one of the most pleasant ever experienced. The entire force of boys was always ready and eager to begin the day's work; during the noon hour the boys entertained themselves by playing on the school piano and the victrola. Thruout the day the boys were cheerful and happy in their work and the noise from the shop sounded as much like a boys' glee club as it did a cabinet shop in full operation.

Type of Commercial Desk made for Eugene High School.

MODELED LEATHER WORK

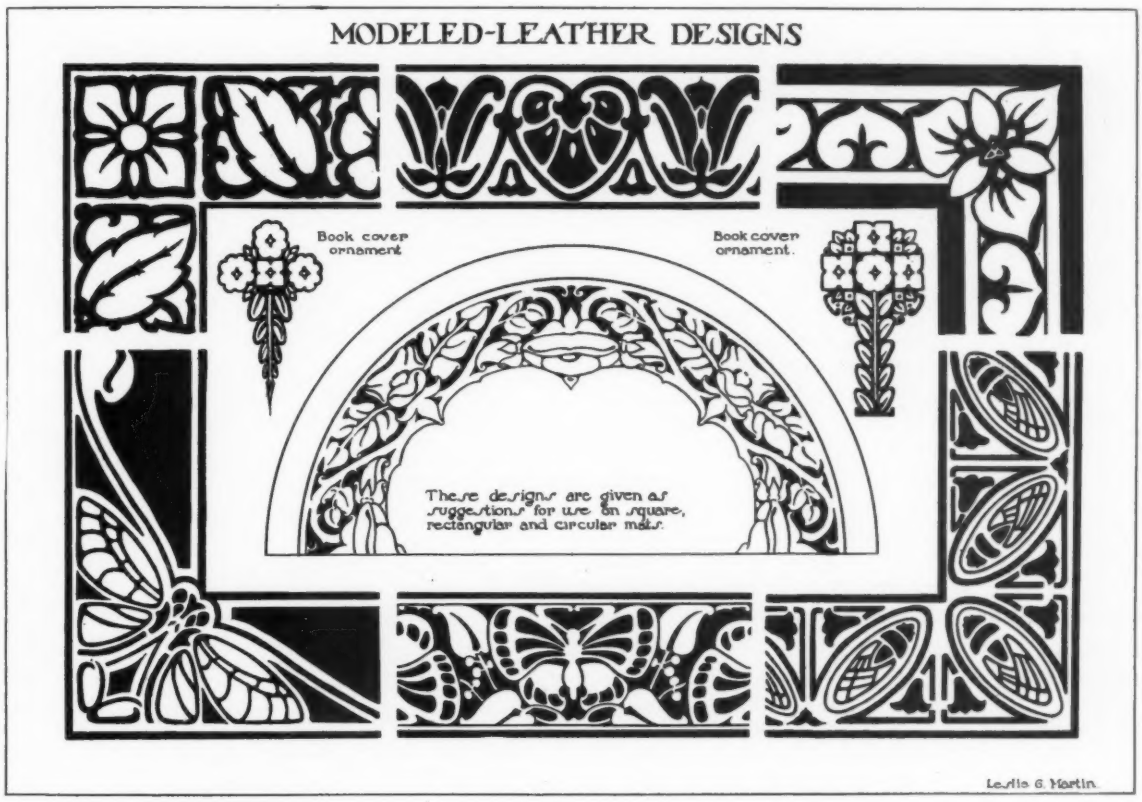
Leslie G. Martin, West Henrietta, N. Y.

I have found the designing of mats and other objects of leather to be a very successful problem for students of design.

Modeled leather was one of the first forms of artistic decoration. Many beautiful examples are still in existence that were done in the thirteenth century.

The photographs show a circular table mat and a mat used in a serving tray under glass. The best results are obtained by using the best grade calf-skin. The designs are made on tracing paper and are applied to the leather by moistening the leather and tracing over the design with a sharp pencil. This leaves an impression of the design in the leather. For ordinary tooling the leather should be soaked in water, care being taken not to get it too wet. The leather should be placed on plate glass or lithographers' stone while working to insure a hard, smooth surface so the impressions will be even. The background of the design is stamped down with metal stamps, which can be purchased. For low-relief modeling the leather may be held in the palm of the hand while working, but if a higher relief is desired the design may be modeled over wax.

The drawing shows several designs which have worked out very successfully.


MODELED-LEATHER DESIGNS
Book cover ornament
Book cover ornament.
These designs are given as suggestions for use on square, rectangular and circular mats.
Leslie G. Martin

Round Table Mat.

Tray with Leather Panel under Glass.

INDUSTRIAL-ARTS MAGAZINE

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EDITORIAL

PREVOCATIONAL WORK.

IF the term prevocational ever comes to signify anything of permanent worth in our system of education, it will do so in spite of some of the efforts that are now being made in its name.

It seems to be a common error among many to regard prevocational work as a kind of substitute occupation for those unfortunate grammar school boys who are too dull, too indolent, or too morally perverted to fall in love with grammar, music and arithmetic. One superintendent complacently referred to such work as "courses organized for roughnecks." Observation of the handling of such courses in some sections rather bears out this statement. It is cheerfully granted that good prevocational work will do infinitely more for boys who have fallen victim to such unhallowed classification, than the regular work which the schools have thus far offered. But if such be its purpose, it should cease at once to be called prevocational. It might with less violence to the truth be called the reclamation service where the waste product of the public school is worked over. There certainly can be no greater work until there ceases to be a waste product to save. But this is not the essence of prevocational work, and the character of the work under such conditions is in no genuine sense prevocational. Perhaps real prevocational work has been sometimes attempted at too early an age.

We conceive prevocational courses to be definite "try-out" courses in a variety of work designed to guide a boy in the selection of his vocation without attempting to prepare him adequately for such vocation. We dissent entirely from the view that proper prevocational work is a kind of dabbling with vocational work—a "puttering" that has no vocational significance and hence may be gone thru without definiteness of purpose and seriousness of effort.

If prevocational work is to be a boy's guide or insight into the vocational field—a kind of "movie" of adult occupations—it should give him an accurate picture. It is due the boy that he be told the truth about the character and demands of the work toward which he is aiming. Hence it is but fair to the boy that his experience be a part of the real thing. We are inclined, therefore, to argue that good prevocational work is also good vocational work as far as it goes—that it differs only in time and extent and not in character or content.

There is another more or less prevalent conception in connection with prevocational work against which we desire to protest. That is the assumption on the part of some that only the dull, unambitious, and otherwise unfortunate boy will or should look forward to a life in the trades. Somehow, it seems difficult for many to appreciate the fact that many of the skilled trades hold out as great opportunity for service, for satisfying life, and even for remuneration and advancement as do some of the so-called professions.

Trades are essential to social and individual welfare. They must be furnished with workers. To engage in such lines of service is a perfectly legitimate ambition for a boy to have. More and more the workers must have a chance to succeed by being trained for their tasks. It is the business of vocational education to give this training. Finally, it is the very important business of prevocational work to inform, guide, and encourage boys along the ways that start toward suitable and profitable employment, and if the schools will do this wisely; it can do no greater service.

A CHRISTMAS OPPORTUNITY.

THERE was never a time when the art, manual training, and household arts departments had such an opportunity to do an effectual service in connection with gifts for Christmas as at the present time.

Thousands of people who have heretofore bought more or less expensive gifts for friends will this Christmas send gifts made by their own hands from small amounts of inexpensive materials. There is practically no end to the suggestions that will arise along this line in connection with the school work of the boys and girls. The actual money that may be saved for more important service in the present crisis would be surprisingly large if this matter were properly organized and systematically carried out.

Movements are already on foot among groups of friends whereby each agrees to the plan of using original, nicely printed remembrance or sentiment cards instead of any kind of gift. Usually in such plan the money thus saved is given to the Red Cross and other important organizations so vital to the success and welfare of our country.

Besides the monetary consideration, these plans would start a movement for saner and simpler means of celebration of the Christmas season. Eventually, a movement of this sort would help to revive the real spirit of Christmas and to reinvest the current empty and meaningless forms with significance and good will.

WAR PEDAGOGY.

WHEN we undertake to teach a man to engage successfully in an enterprise in which he hazards, not only his own life, but the life of the nation as well, we reach the very essence of necessity for wise

and efficient methods. From this point of view, it is interesting to note the attempts being made to prepare our soldiers for the crucial conflict.

In the first place, every possible effort is being made in the training of soldiers to have the conditions of training identical with those obtaining at the front. It is not enough that the men read about trenches or even examine photographs of the network of trenches on the European battlefields. They must actually construct trenches and use them. Attacks and counter attacks are made. Bayonet practice is brought as near the reality as possible even to the use of a model of the human form to receive the thrusts.

Not only are the conditions expected to be as nearly as possib'e those of real warfare, but the instruction is expected to be given by those who have actually wielded the grim instruments of carnage on the field of battle. Hence, our most experienced men in the previous wars of our country have been called upon to direct the instruction. But even this did not satisfy. Scores of French and English soldiers scarred and battered in the actual conflict have been brought to our camps as instructors.

After all such efforts to bring reality into the training, it seemed advisable to those in authority to transport our soldiers to France and to station them in the rear of the fighting armies within the sound of the guns.

All this has seemed necessary in order to prepare men for the performance of very definite and difficult tasks. This is vocational training raised to the nth power, and it may be worth while to observe that it is being given thru short unit courses. Non-essentials have been utterly disregarded. In such an undertaking, nothing counts except those things that actually help one to do the job at hand.

Thus some of the pedagogical convictions that have come to be held by leading vocational teachers are emphatically endorsed by the teachers of the science and art of warfare and confirmed by the results of these methods of training for efficiency in the soldiery of this country.

VOCATIONAL EDUCATION AND THE RETURNED SOLDIER.

THE problem of returning the men who make up our army of over a million men to civil life at the close of the war is attracting wide-spread attention. The seriousness of the problem can hardly be overestimated, and as the army grows, the problem will become increasingly complicated.

Current discussion indicates the existence of two plans for meeting the situation. One is that a comprehensive study be made to determine the demands of various industries and commercial lines in order to determine what work the returned soldier should enter and for what lines he should perhaps be re-educated in order that he may find a position. This theory assumes that the soldier is a stranger—an outsider who is coming into our country to be put to work where he can best fit in.

The other theory is that the soldier is really our neighbor and co-worker, who has left his position temporarily and that his claim on the job or position is a right to be recognized rather than a concession to be granted. The conditions would be somewhat similar, if the soldier had vacated a house which was rightfully his, and in his absence a stranger had moved in. When the rightful owner returns, the stranger should vacate and allow the owner to have what is rightfully his.

It would seem that this latter theory is the only one that can be given serious consideration. The solution of the problem for the man whose present position is jeopardized in the readjustment, lies in his preparing himself to move when the time comes. This is the opportunity for the vocational school.

The crippled and disabled soldier also has his rights. He gave up, at the call of command of his country, a fairly remunerative position which presumably he was capable of filling satisfactorily. He has in the national service not only lost the ability to follow his former occupation, but has had his range of possible occupations limited. It is altogether reasonable to expect the men who have made no such great sacrifices for their country, to so readjust themselves occupationally, that employment for the disabled soldier will be possible in the lines to which his injury has limited him. It is the duty of the country, in-so-far as possible, to reinstate him in a position where he can do the work in as satisfactory a manner as before.

The primary consideration in the readjustment is not the maintenance of present economic conditions, but is the matter of justice to the soldier whose economic conditions were not considered when he was called into the national service.

If vocational education is the effective agency in our economic life that many of us have felt it to be, this is the time for us to demonstrate its effectiveness. It can pave the way for a readjustment not by waiting for the returned soldier who may be out of work, but by preparing those now at home to either move up or aside to make place for those who have offered their all for the preservation of those institutions upon which our happiness and prosperity are dependent.

ART has power beyond all other forms or means of recreation—to recreate the wasted tissues of our souls, the worn fibres of our brains, to recreate indeed the zest and courage for life.

It is very far from being appreciated as yet by our wealthy men that art can be as educational as universities.

To feel, to appreciate, to understand the beauty of nature and of art is one of the greatest gifts that can be given to anyone.—*Otto H. Kahn*

A MODERN FAIRY STORY

There is a Fairy in the City of Salt Lake who offers to pay, to every pupil *who makes good*, $2.60 a day to go to school.

She has already established an institution in the city at a cost of some three and a half million dollars in which she is going to spend more than a million dollars a year—about $50 for every boy and girl attending school. Thru this institution and backed by this annual expenditure of $1,000,000 a year she makes the afore-mentioned remarkable offer. And I might add that she makes a similar offer in every city thruout the country. Let me repeat it. There is a Fairy in the City of Salt Lake who offers to pay, to every pupil *who makes good*, $2.60 a day to go to school.

The fairy is an exceedingly kind fairy; but she feels just a little bit hurt because she has a slight notion that neither the pupils nor their parents ever stop to think what she is trying to do for them. Yes, even fairies like to be appreciated.

This is not one of your "Once upon a time" fairies, but a really and truly up-to-date fairy. She started out by making a survey of conditions,—yes, an efficiency survey; and she finds that in hard times the uneducated is usually the first to lose his job. She also finds that even in prosperous times the uneducated man does well if he earns $1.50 a day for 300 days a year and keeps this up for 32 years. She has come to the conclusion, therefore, that the uneducated man, working from the time he is eighteen years of age until he is fifty, at $1.50 a day for 300 days a year, can earn during his most useful period $14,400.

$1.50
300
———
$450.00
32
———
900
1350
———
$14400.

Her survey further shows that where those who *really have made good in the grades and high school* go out into business, the trades or the professions their earning capacity averages at least $825 per year, $26,400 for the 32 years.

$825
32
——
1650
2475
——
$26400
14400
———
$12000

The difference between $26,400 and $14,400 or $12,000 represents the difference between educated and uneducated labor. The fairy realizes that men who have gone thru school usually pick up considerable useful information after leaving school. She grants, therefore, that half of this increase is due to education, professional, industrial or commercial, received after leaving school. The other $6,000 must represent the value of the boy's twelve years spent in school. This means $500 per school year of 190 days. Thus you see the fairy offers $2.63 a day to every pupil who makes good for every day the pupil attends school. She gives this for first and second grade work as well as for seventh and eighth grade and high school work.

12)$6000
———
190)$500
———
$2.63

To the parents she wishes to say that this investment of $4,500,000 in a plant and running expenses, an expenditure of $200 per pupil, brings annual returns of $500 per pupil. Parents who know of a better investment may perhaps not make a financial mistake when they take their children out of school after they are thru with the sixth grade.

To the pupils she wishes to say that it is up to them to go and collect this salary. She will then find for every fair lady a dashing young prince and for every young knight a beautiful princess, so they may go their ways and live happily ever after.

Your humble servant,
Herald to the Fairy,
Milton Clauser.

(With due apologies to Dr. Nathan C. Schaeffer, whose use of similar data gave me the idea.)

MIAMI VALLEY TEACHERS MEET.

The Miami Valley Industrial Arts Association held its fall meeting at Oxford, Ohio, on October 19 and 20. This association includes in its membership the industrial arts teachers of southwestern Ohio and holds two meetings annually, in October and April, respectively. The active membership in the association is about one hundred.

This session opened with a six o'clock dinner at the University Commons of Miami University. Following the dinner, words of welcome were extended by President Hughes of the University, and President Cushing of the Association responded. Mr. S. J. Vaughn, of the Northern Illinois State Normal School, De Kalb, was the speaker of the evening. He discussed "Our Problems."

At the Saturday morning session, Mr. Vaughn delivered another address much appreciated by the large number of teachers present. He took for his theme "The Importance of Each Industrial Arts Teacher having a Clearly Defined Aim for His Job."

He developed the thought that it is the genius of the American people to stand for freedom, opportunity and democracy as no other nation or people of the world has stood for or had a conception of these fundamental human rights. He raised the question whether we as a nation are wholly free. To be free one must know how to use his freedom. We are making much progress toward political freedom. Do we as a people have industrial freedom while barons of capital and unscrupulous leaders of labor dictate what we must do?

It is the job of industrial arts teachers to liberate the people of the country industrially. To do this, all units of industrial education in the schools must work together—industrial arts, household arts, art and design.

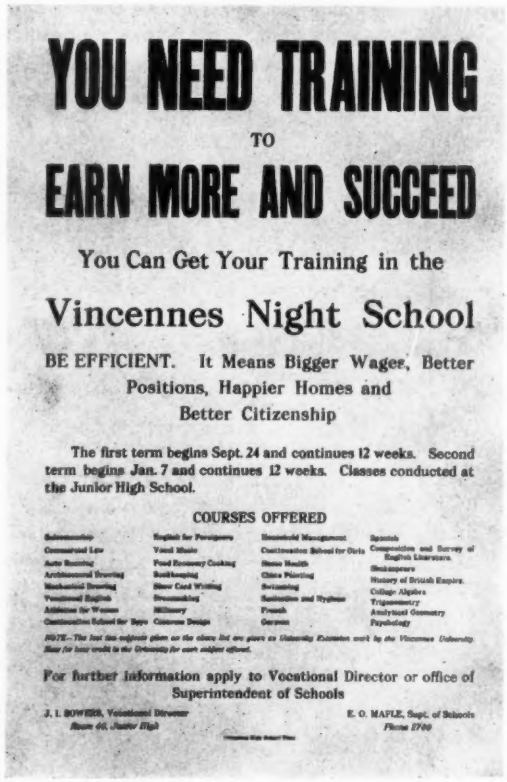
A unified subject had been arranged for the meeting. It is as follows:

The Beginning Course in Industrial Arts.

I. The Aim—What are the aims and purposes of industrial arts in the schools?

II. What—What should the beginning course be—woodworking, metalworking, both, work with other materials?

III. How Considered—In correlation with other school subjects; For making the boy useful at home and at school;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EARN MORE AND SUCCEED
You Can Get Your Training in the
Vincennes Night School
BE EFFICIENT. It Means Bigger Wages, Better Positions, Happier Homes and Better Citizenship
The first term begins Sept. 24 and continues 12 weeks. Second term begins Jan. 7 and continues 12 weeks. Classes conducted at the Junior High School.
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Shorthand
Millinery
Costume Design
Household Management
Continuation School for Girls
Home Health
China Painting
Swimming
Salesmen and Hygiene
French
German
Spanish
Composition and Survey of English Literature.
Shakespeare
History of British Empire.
College Algebra
Trigonometry
Analytical Geometry
Psychology
NOTE—The last two subjects given on the above list are given as University Extension work by the Vincennes University. Also for home credit in the University for each subject offered.
For further information apply to Vocational Director or office of Superintendent of Schools
J. I. SOWERS, Vocational Director
Room 66, Junior High
E. O. MAPLE, Supt. of Schools
Phone 3700

A successful Poster produced by the High School Print Shop, Vincennes, Ind. Mr. J. I. Sowers, Director of Vocational Education.

As a study of a typical industry; For vocational guidance and prevocational work; For formal discipline and hand training.

IV. Helps—Textbooks; Equipment; Design-planning the project; The working drawing.

After Mr. Vaughn had discussed the general aim of industrial art in the curriculum, other parts of the subject were presented by Jessie F. Beals of the Industrial Arts Department of Earlham College; Forrest T. Selly of Miami University, and Arthur R. Probst of the Cincinnati schools.

The officers of the association are Wm. S. Cushing, of Cincinnati, president; and Fred C. Whitcomb, of Oxford, secretary-treasurer.

MANUAL TRAINING IN GRAND RAPIDS, MICH.

Close co-operation between the Grand Rapids Furniture Designers and the Manual Arts Department of the Grand Rapids schools is assured by the recent adoption of a report by the board of education of the city. A committee of the designers becomes thru the report an advisory committee to the department and will hold itself ready upon call to prepare designs for projects, to criticize models and to give counsel in the outlining of policies.

During the convention of the Western Drawing and Manual Training Association in Grand Rapids in 1916, a local speaker took occasion to criticize some of the cabinet work exhibited. His charges were taken up by the manual training teachers and the Designers' Section of the Furniture Manufacturers' Association was asked to investigate the work of the department. The designers submitted a written report in May, 1917, and this was studied by a joint committee of three prominent designers, three members of the board of education, Supt. W. A. Greeson and Supervisor L. R. Abbott.

In general the designers recommended minor changes in the work in the direction of better design, correlation of drawing with woodwork, more practical and useful projects, closer attention to the finishing of pieces made by the students, and the care and sharpening of tools. The committee found that practically all of these recommendations are already in force and that changes which are being introduced gradually will make them universal thruout the schools in a very short time.

In discussing the drawing taught in the grades the designers said: "We suggest that the art and manual training departments should be more closely allied in the matter of design and drawing and that courses might be outlined with that object in view."

The committee in commenting on this said: "Your committee heartily agrees in the above statement and would recommend that the Supervisor of Art and the Director of Manual Training be instructed to revise their courses if necessary so that it will be possible for the pupils to bring to their manual training classes designs made in the art department expressly for application to problems to be constructed in the manual training classes. This, we feel, would not interfere with the effectiveness of the work being done in either department, but rather make for more efficient work in both.

"It would appear that the work as at present outlined by the Manual Training Director offers opportunity for design and decoration entirely within the ability of the pupils in the different grades. We also feel that this is art work and should be planned for in the art courses in their time allotment."

In discussing the work of the high school departments the designers suggested that: "In the high schools, which are equipped with machinery, more advanced pieces might be made, for which the designers are willing to furnish designs and details. No models would be necessary in this course.

"Students wishing to make a piece of original design should have such designs approved of so that all work turned out by the pupils in our schools will be of good proportion and form."

The board of education accepted this recommendation but its committee expressed the opinion that the policy of making furniture for the use of the schools is of greater educational as well as vocational value and should be continued as such.

The final paragraph of the report and the comment of the committee reads: "The furniture designers, as before stated, are prepared to cheerfully render such services to this department as may be requested of them.

"The committee feels that the opportunity presented the board of education by the interest taken in these problems by the Furniture Manufacturers' Association, places this city in a class by itself and makes possible the bringing of the work along woodworking lines on to a high plane, both as to instruction offered and as to character of work accomplished."

DIRECTORS MEET AT THE STOUT INSTITUTE.

On September 19, 20, 21, a meeting of directors of vocational education, superintendents, and others interested in this field in Wisconsin, was held at The Stout Institute. The conference was called and conducted by the State Board of Vocational Education for the purpose of presenting its problems and policies, and securing the co-operation of all concerned in unifying and bettering the work.

To this end President E. W. Schultz and Director F. L. Glynn of the State Board, emphasize the fact that in the promotion of the work within the state it was the board's desire to avoid establishing a rigid, arbitrary policy. The course to be pursued was one taking into consideration the needs and experiences of the various cities. Every step taken has the express purpose of bettering and improving the vocational schools of the state.

President Harvey of the Stout Institute presented the problem of the training of the vocational teacher, followed by Mr. F. S. Lamb, Secretary and Accountant of the State Board of Education on the "Installation of a Uniform Accounting System." The desirability of such a system was very clearly presented. Courses of Study and Organization of Instruction by R. H. Rodgers of the Stout Institute brought out the possibilities and value of unifying the trade practice, technical subjects and the socializing work given in the vocational schools.

A very interesting and profitable discussion centered around the qualifications of teachers. The relation of this problem to better teaching and also the recent Federal legislation was clearly brought out, and the consensus of opinion was that standards carefully set up were desirable and necessary.

Valuable papers were also given during the conference by G. R. Irwin, Taylor Frye, Stewart Schrimshaw, Sidney Williams and Miss Marlatt.

SUGGESTIONS FOR CHRISTMAS TOYS.

For the benefit of teachers of the industrial arts who are seeking practical ideas for Christmas work in their classes, the *Industrial-Arts Magazine* offers a list of problems and books. The problems listed appeared originally in the several issues of the Magazine and are the work of teachers who have actually tried them out. The books recommended represent a wealth of material in toy making and are comparatively inexpensive.

Toy Problems for Christmas.

A Doll's Cradle, E. M. Cook, February, 1917, p. 86.

A Mechanical Duck, Gerald A. Boate, March, 1917, p. 129.

An Old New Game, Frank H. Shepherd, November, 1917, p. 460.

A Cribbage Board, Geo. H. Wichmann, July, 1916, p. 317.

Inlaid Checker Board Table, Milford G. Fox, April, 1916, p. 175.

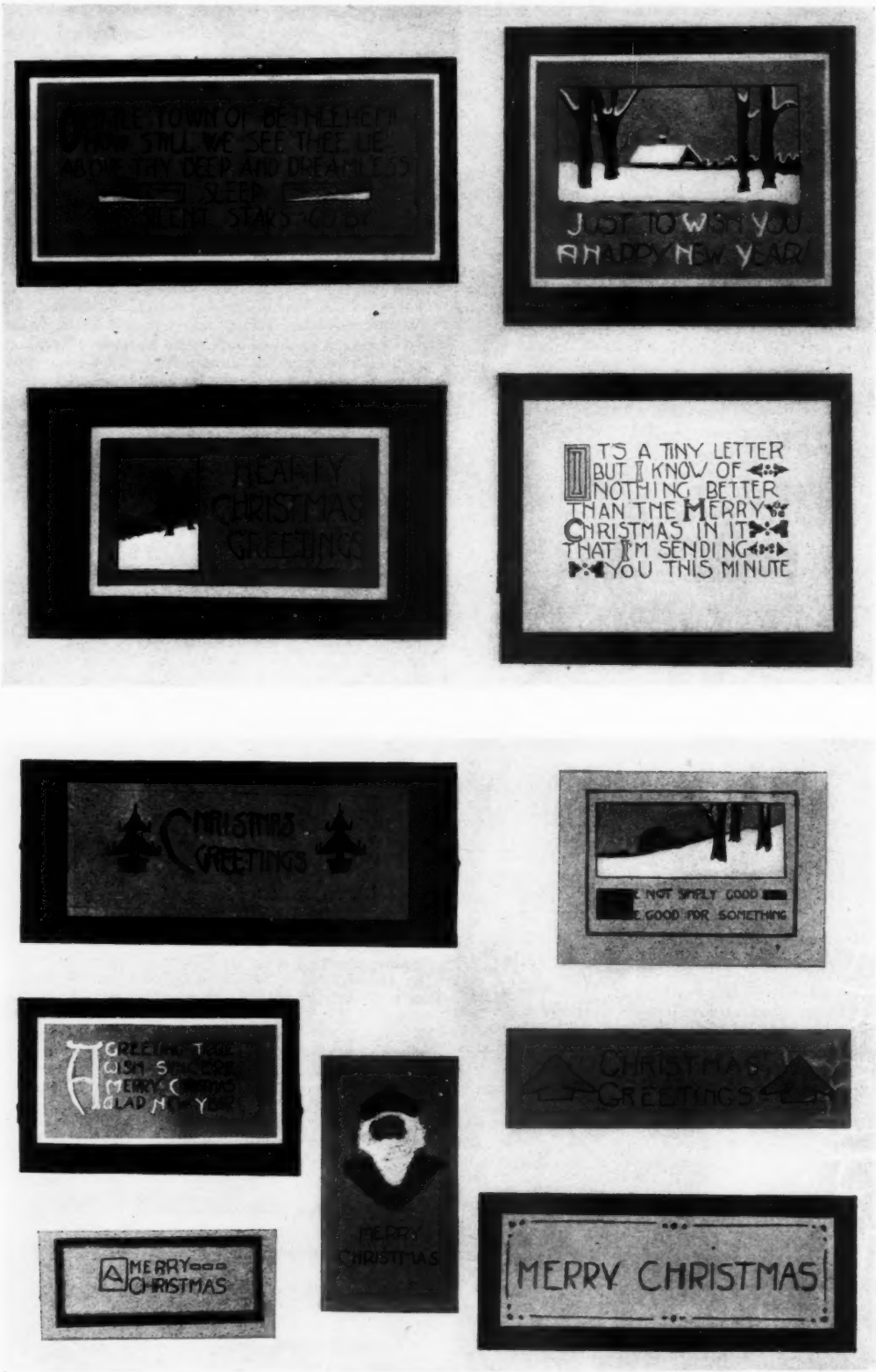
A Toy Dog, P. H. Heron, March, 1916, p. 130.

A Bean Bag Board, Arthur Kinkade, October, 1915, p. 175.

Making and Repairing Christmas Toys, Elmer Christy, December, 1915, p. 267.

Toy Repair Work in Oklahoma City, Okla., H. F. Rusch, March, 1915, p. 139.

Something to Laugh At, December, 1914, p. 272.



Well Designed and Lettered Christmas Cards made in the Elementary Schools of Springfield, Mass. The media used are crayon and water colors, on colored cards. The black and white reproductions give no idea of the interesting color harmonies which the children developed. In some instances envelopes were made to match or the cards were cut with flaps and seals ready for mailing. Reproduced thru the courtesy of Mr. C. Edward Newell, Supervisor in Charge.

PROBLEMS AND PROJECTS

The Department of Problems and Projects, which is a regular feature of the INDUSTRIAL-ARTS MAGAZINE, aims to present each month a wide variety of class and shop projects in the Industrial Arts.

Readers are invited to submit successful problems and projects. A brief description of constructed problems, not exceeding 250 words in length, should be accompanied by a good working drawing and a good photograph. The originals of the problems in drawing, design, etc., should be sent.

Problems in benchwork, machine shop practice, turning, patternmaking, sewing, millinery, forging, cooking, jewelry, bookbinding, basketry, pottery, leather work, cement work, foundry work, and other lines of industrial-arts work are eligible for consideration.

Drawings and manuscripts should be addressed: The Editors, INDUSTRIAL-ARTS MAGAZINE, Milwaukee, Wis.

A SLED.

Wm. P. Taugher, Antigo, Wis.

This is the time of the year when manual training teachers have many requests for permission to make sleds. When, in the judgment of the teacher, the request is made by a boy who has not confused enthusiasm with ability, the privilege is usually granted.

The first matter to be decided upon is the design. As a suggestion on this point the writer offers the accompanying drawing.

This is primarily a coaster type. Should two boys wish to construct a bob, shorten the runners to at least thirty inches to permit easier action in turning corners. If a sled of greater carrying surface be desired widen the braces and top board to suit.

Chestnut is suggested as material for runners as it is light and strong. If it be difficult to obtain, oak may be used with a pine or cypress top board.

Where the school has no forge shop any blacksmith will put runners on. Have him use $\frac{3}{8}$" iron.

THE MAKING OF KNITTING NEEDLES.

Daniel Green, Western Illinois State Normal School, Macomb, Ill.

Knitting for our soldiers seems popular with the ladies as a method of doing their bit. Needles retail at 25 to 35 cents a pair and up. They may be made easily and cheaply by students in the shops where speed lathes are available.

Red cedar seems best adapted for the purpose of making needles. Secure straight grained stuff and joint it straight and true. Rip out pieces about 1" longer than the length desired and with a side of the cross section only slightly greater than the required diameter of the needle.

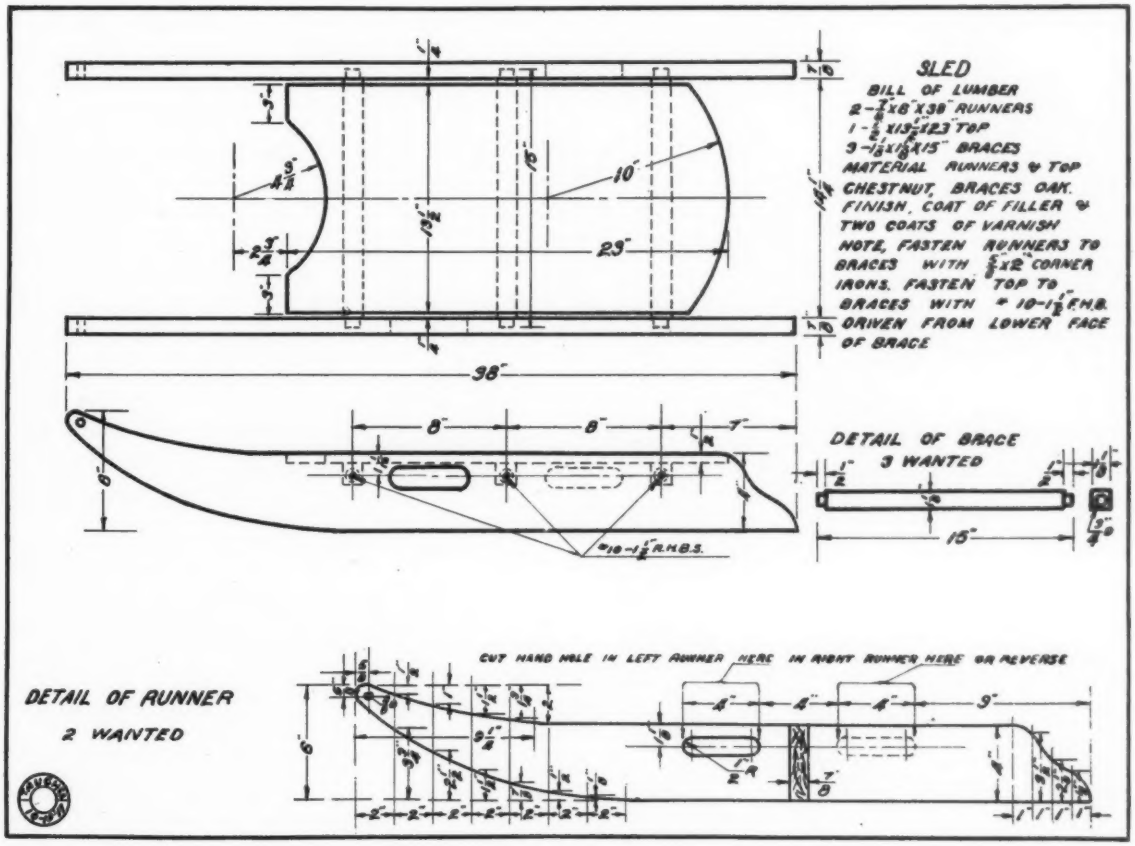
Needle sizes are about as follows:

For sweaters—dia., .200"; length, 14"; twist drill No. 7.
For helmets—dia., .175"; length, 13"; twist drill No. 16.
For wristlets—dia., .135"; length, 12"; twist drill No. 29.

Secure a piece of cold rolled steel $\frac{1}{2}$"x2"x5" and drill a hole in the center of each end in such a manner as to allow it to be bolted to the face plate of a speed lathe thru the screw holes on the face plate, and so that it will approximately center up on the lathe. With a twist drill of the size of the needle required—see above—drill a hole thru the piece of steel while the lathe is running. Countersink the face of this hole.

Clamp a jack plane bottom up in a vise and run the cedar sticks across the plane to take off the corners.

Start the lathe on high speed and feed the cedar sticks thru the hole in the piece of steel. A little pressure may be required, but if the pieces have not been ripped too large, they will feed thru nicely and leave a well finished surface.

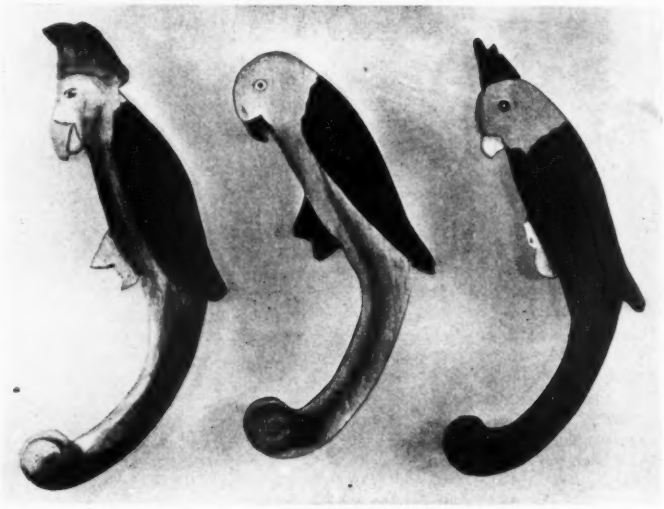

SLED
BILL OF LUMBER
2 - 7/8 X 8 X 38 RUNNERS
1 - 7/8 X 13 1/2 X 23 TOP
3 - 1/8 X 1 1/8 X 15 BRACES
MATERIAL RUNNERS & TOP CHESTNUT, BRACES OAK.
FINISH, COAT OF FILLER & TWO COATS OF VARNISH
NOTE, FASTEN RUNNERS TO BRACES WITH 5/8 X 2 CORNER IRONS. FASTEN TOP TO BRACES WITH # 10 - 1 1/2 F.H.B. DRIVEN FROM LOWER FACE OF BRACE
38"
23"
10"
8"
8"
7"
#10-1 1/2 F.H.B.S.
DETAIL OF BRACE
3 WANTED
15"
DETAIL OF RUNNER
2 WANTED
CUT HAND HOLE IN LEFT RUNNER HERE IN RIGHT RUNNER HERE OR REVERSE
4"
4"
4"
9"

Details of Sled Designed by Wm. P. Taugher.

To make the heads or knobs rip some cedar slightly greater than ⅜″ square and about 4″ long. Drive these thru a ⅜″ dowel plate. Fasten a piece of pine about 2″ thick to a face plate, and, while the lathe revolves, drill a ⅜″ hole thru the center of the pine chuck. A ⅜″ drill is best, but a ⅜″ auger bit will do. Chuck one of the ⅜″ pieces of cedar in the hole in the pine piece. With a drill the same size as the needle, drill a hole thru the center of the cedar as the lathe revolves. Remove from the chuck and cut the cedar into ⅜″ lengths. Glue one of these lengths on one end of the needle. When dry, chuck the needle in the hole in the steel plate—a little shellac will hold it—and turn the head down. The needle may be sanded lightly by allowing the free end to turn in the palm of one hand as the lathe runs, and applying the sandpaper with the other hand.

The needle may now be cut to length and pointed on the side of an emery wheel or on a revolving disc of sandpaper glued to a chuck. French polish the needle by hand with a little shellac on cheese cloth and a drop or two of linseed oil.

These needles may be made in quantities this way and given to the local Red Cross.



Three Swinging Parrots Made in Mr. Diers's Classes.

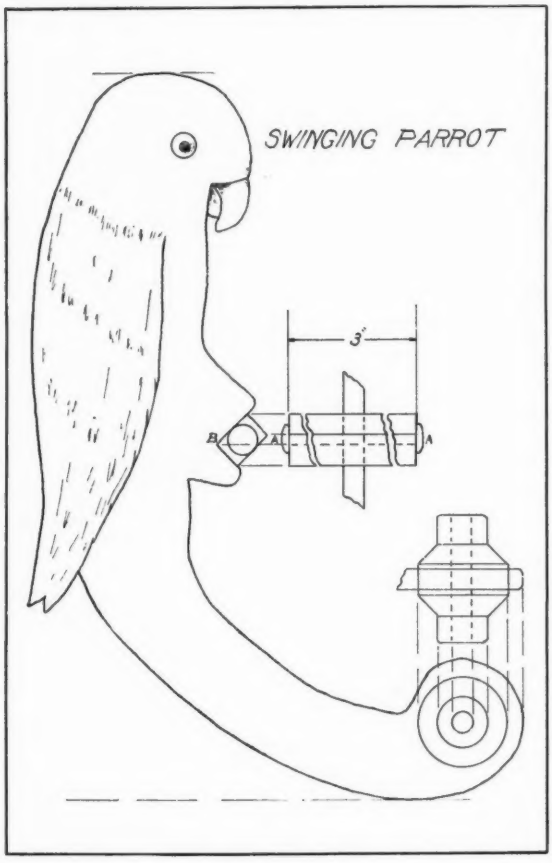
SWINGING PARROT.

Charles B. Diers, Duluth, Minn.

The swinging parrot here shown proved very popular in sixth, seventh and eighth grade coping saw work.

The parrot is cut from ¼″ basswood and is very easily constructed. A better and more artistic finish was required from the eighth grade than from the sixth.

In constructing, first trace on wood with a carbon paper or use a templet. The addition of a notched top-knot sometimes increases the natural effect. Cut out with coping saw in the usual manner and finish off the edges with sandpaper until round and smooth.



Details of Parrot.

Make ¼″ hole thru the center of the tail, insert a dowel rod and glue on half spools as shown in the drawing. When drilling this hole be sure to have a sharp bit, and clamp the wood in a vise almost up to where the hole is to be made. This helps somewhat in preventing the tail from splitting while drilling. The spool acts as a balance weight for the parrot.

Make the perch 3″x½″x⅜″. Drive a 1″ brad thru the center of ½″ side and fasten to the parrot at (B). When fastening, clamp the feet of the parrot in the vise to prevent splitting out on the sides.

When the perch is on, test for balance by holding between both hands; if the balance is not perfect move the perch up, down or sidewise until perfect balance is secured. In fastening the perch on permanently, use a little glue in addition to the brad.

Fasten the cord by which the parrot is swung at ends of the perch A and A with tacks. After sandpapering, it is now ready for painting.

There are many ways in which the parrot can be finished. For instance, it can be painted white, with eyes, bill, wings, etc., outlined with black paint. The same can be done using red, blue, yellow, or any combination of color which will look well. The wings might be painted red and the body green, with the bill, eyes, and feet black, or, if a student is very good at painting he might be allowed to try to get the natural bird effect by blending and shading the colors.

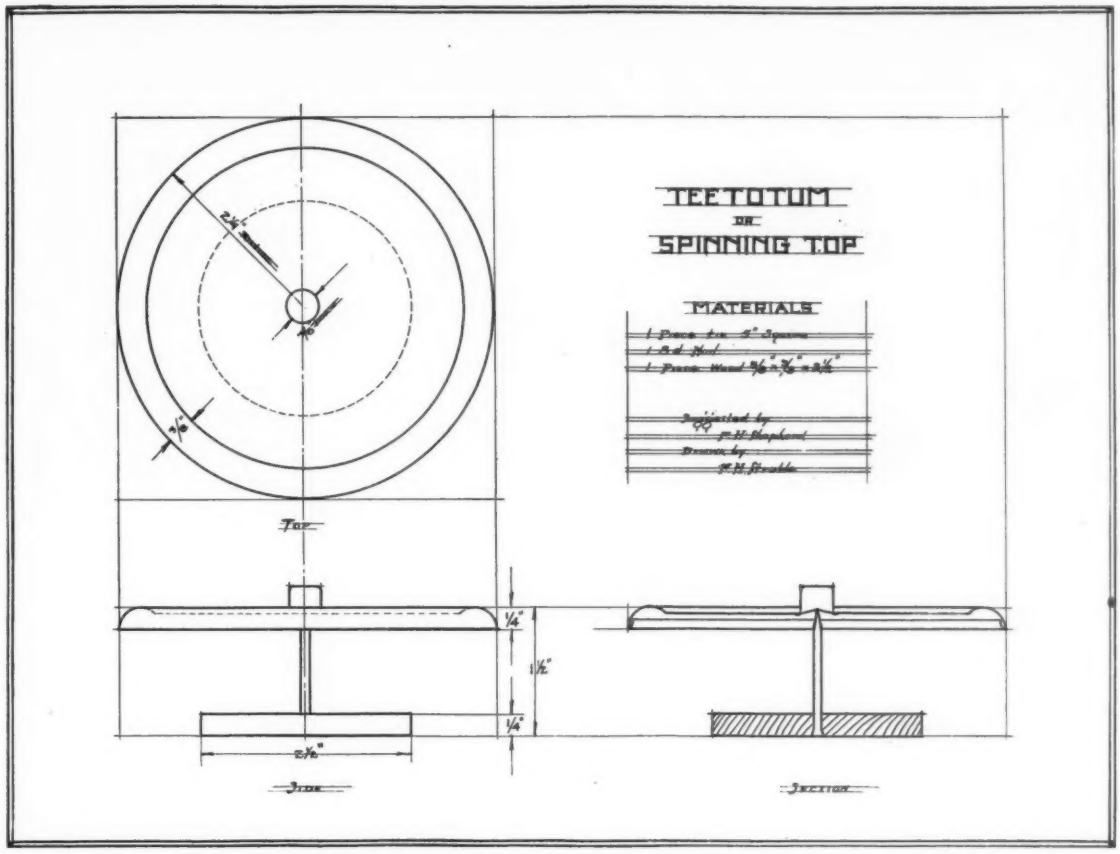
If the work is good and the painting artistic, the parrot is a pleasing addition to any home.

AN OLD NEW TOY.

Frank H. Shepherd, Oregon Agricultural College, Corvallis, Ore.

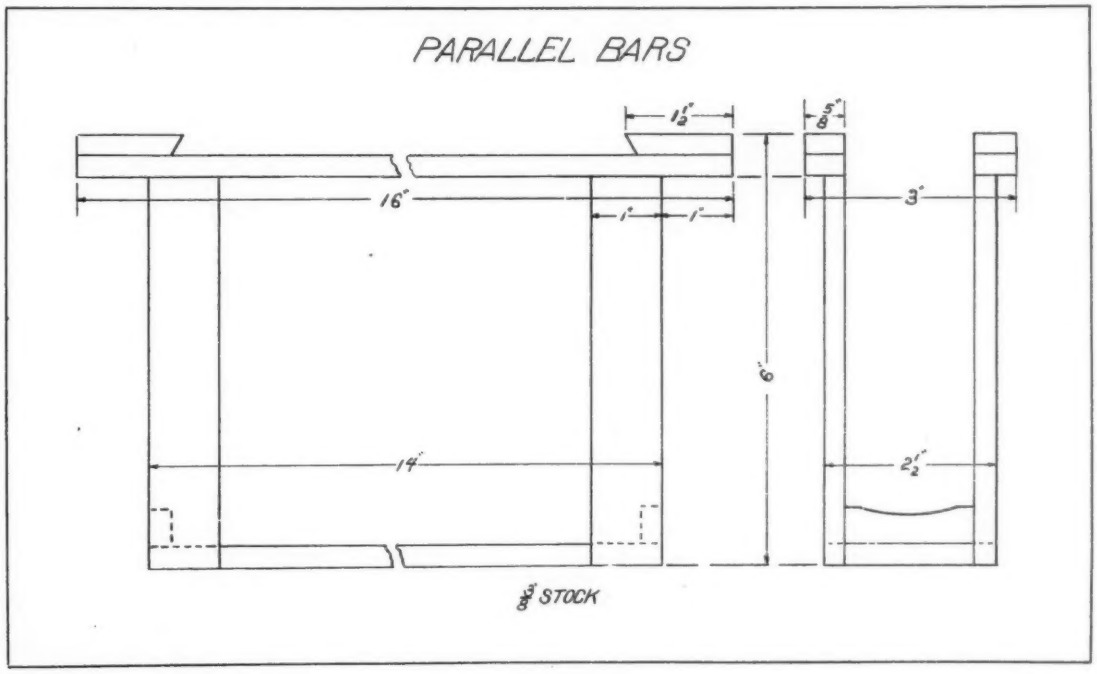
It seems unnecessary to give detailed steps for the construction of this teetotum or spinning top. The drawing shows clearly what is to be done unless it be the matter of soldering on the cap or head by which the spinning is done. The teacher who has the power of initiative will see where improvements can be made and where the cost of construction can be lessened.

The particular top from which the drawing was taken was made from the cover of a tin box that had contained coffee. The base or pedestal was a scrap that had been cut off from the bottom of a plank from which a boy had turned a goblet at the wood turning lathe. The standard upon which the teetotum spins is an 8d nail that had been dropped on the floor by someone in the school shop. Some teachers will use a wooden standard instead of the 8d nail as a pivot. A wooden standard with a brad inserted as a pivot will give



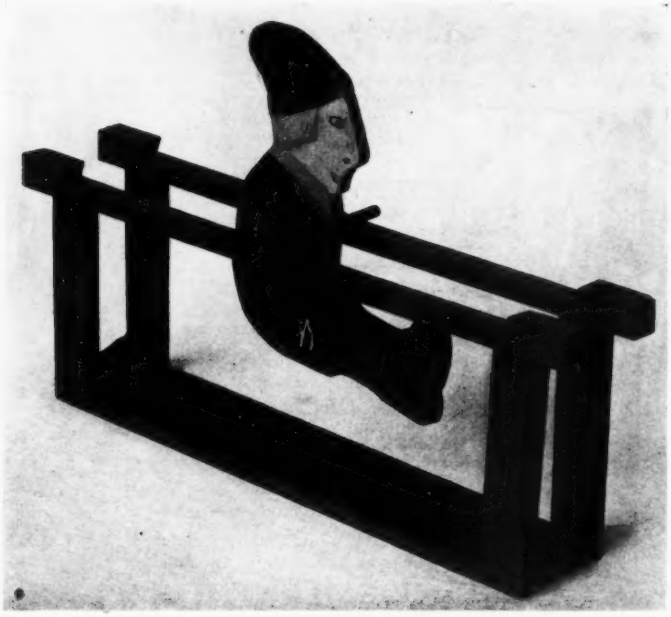
an opportunity for work by the lower grade boys with a dowel plate, a mitre box and a saw.

The teetotum may be decorated with a flat spiral or helical curve done in red, white and blue paint. This will furnish a few good exercises in geometrical drawing for an advanced class, and from these drawings lower grade pupils may cut out stencils to be used in the final painting of the project. The top may also be decorated by means of stencils illustrating "Peter Rabbit," a hound chasing the fox, etc., etc.



Details of Parallel Bars.

(See next Page)



The Completed Tumbler.

TUMBLER WITH PARALLEL BARS.

Charles B. Diers, Duluth, Minn.

The acrobat or tumbler with parallel bars here shown is for use in sixth grade toy-making.

In constructing the parallel bars use $\frac{3}{8}$" pine. True up all pieces to the exact size given. Cut out the corners of the base for the uprights to fit into, then glue and nail uprights to the base, using 1" brads, fitting in the brace between at the same time. Before nailing the parallel bars in place fit, glue and nail stops on ends as shown in drawing. Finish by sandpapering and giving coat of dark paint.

In making the tumber use $\frac{1}{4}$" or $\frac{3}{8}$" basswood. Trace outline on wood with a piece of carbon paper underneath drawing, or make a templet from cardboard, the latter being the handiest when making toys in any numbers. Cut out with coping saw in the usual manner and sandpaper the edges down so that they are round and smooth. Nicely finished edges should be one of the aims in teaching coping saw work in toy construction.

After cutting out and sanding edges of tumbler locate the exact point of balance. To do this drive a thin brad thru the man at about the position of the rocker arm shown in the drawing. Then test the balance by giving the tumbler a few turns, holding him by the nail between the two hands. If he doesn't seem to have the proper balance move nail up, down, or sidewise until perfect balance is attained. Pull the nail out and drill the hole with a $\frac{1}{4}$" bit, thru this hole pass a $\frac{1}{4}$" dowel rod $3\frac{1}{2}$" long. After equalizing the length of arms glue the half spools into place as shown in drawing. After being sandpapered it is then ready for painting.

Before painting, outline eyes, nostrils, lips, cap, arms, trousers, etc. Paint different parts with bright colors. For sixth graders it is advisable to paint one or two parts at a time, allowing time for drying. In this way, the running together of the paints can be avoided.

When placed on the parallel bars he tumbles forward and back in a very amusing manner.

HOW TO BUILD A HALL CLOCK.

William Cowperthwaite, Northeast High School, Philadelphia, Pa.

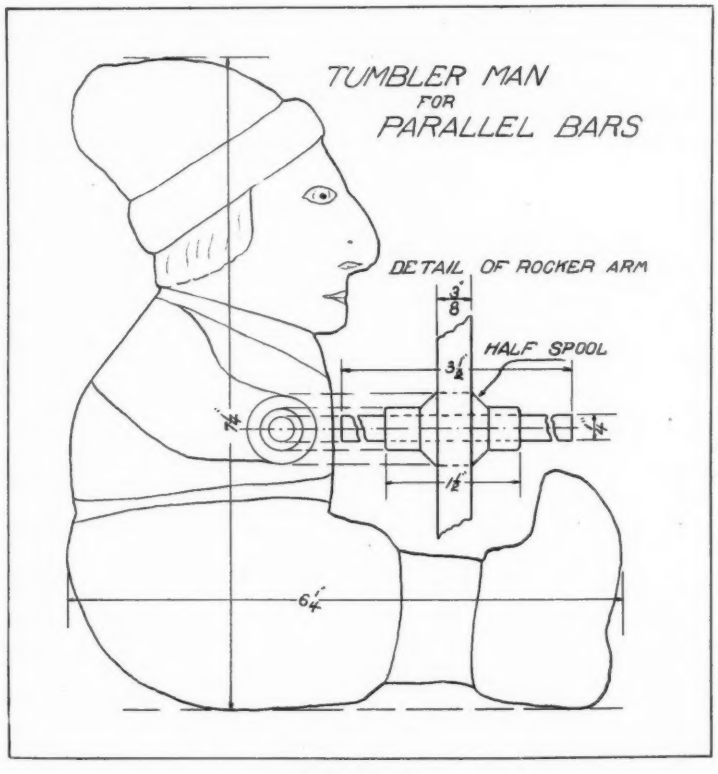
Teachers who are looking for a furniture problem that varies widely from the usual tables and chairs will find a grandfather's clock most satisfactory. Made of well cured mahogany and fitted with a good grade of works it will make an addition to the home that can be looked upon with pride. The accompanying drawing and photograph illustrate a plain case. The sizes in the material list are mostly all finished sizes.

The sides are $65\frac{1}{8}$" high by $9\frac{1}{4}$" wide. Paneling will add greatly to their appearance. Mahogany or plate glass panels may be used. Small doors are fitted in the upper panels to afford access to the works.

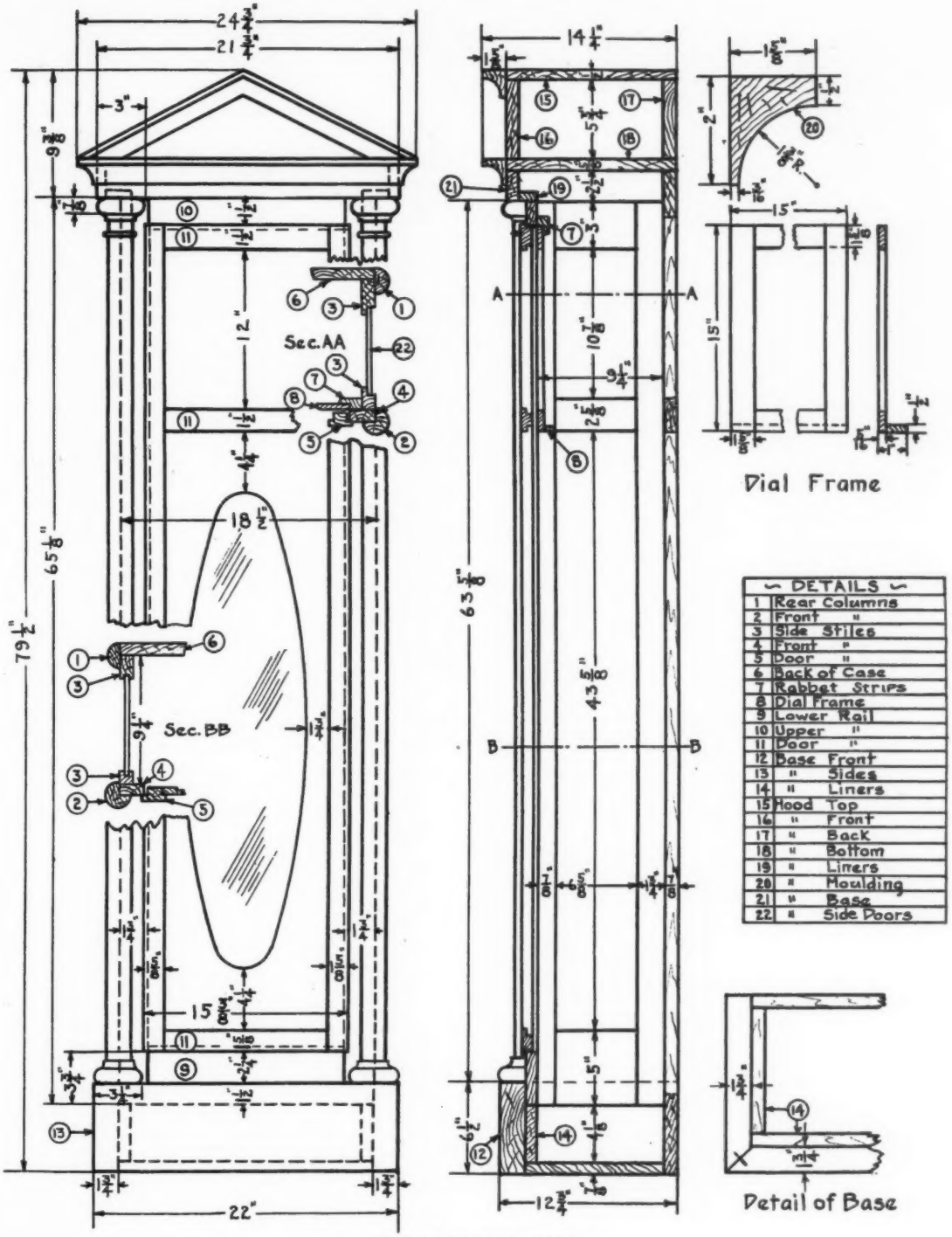
The front stiles of the sides are $\frac{7}{8}$" wide, the balance of the width, $1\frac{3}{4}$", is made up by the thickness of the front frame. (See A-A.) The lower rails are 5" wide, the middle $2\frac{3}{8}$" and the upper 3" wide. The joints should all be strongly mortised and provision made for the panel or glass, by grooving for the panel or rabbeting for the glass. The front frame which holds the door is of the same height as the sides and $18\frac{1}{2}$" wide. The lower rail is $3\frac{3}{4}$", the upper one $1\frac{1}{2}$" and stiles $1\frac{5}{8}$" wide.

This frame is glued and screwed to the side frames. (See sec. AA and BB). Care should be taken in gluing these frames to keep them square and avoid getting them twisted. Securing them to a true surface while the glue is hardening will keep them true.

The base sides are $12\frac{3}{4}$" long by $6\frac{1}{2}$" high. Size the joints with a thin coating of glue before the final gluing and clamping is done. The distance between the inside of the base sides must be $18\frac{1}{2}$", equal to the width of the front frame. See that the joints come up well under the clamps and that the sides are square with the front before gluing.



Details of Tumbler.



DETAILS OF HALL CLOCK.

The base front liner, which is 18½″ long and 4⅛″ wide, should be screwed in place before gluing the miter joint as this will form a shoulder for the sides to rest against while being clamped. The base liners are screwed in place to a line 1½″ below the top of the base. The front and side frames are allowed to rest on these liners and are screwed to the base. The bottom is also screwed to the liners.

The hood base front is 21¾″ long and 2½″ high, the sides are 12⅝″ long, 2½″ high and mitered at the corners with a tongue in the miter. The hood liners are 1⅝″ wide by ⅞″ thick and are screwed on the inside of the hood base front and sides.

Set the hood base in position on top of the frames, secure it with hand screws and bore for ⅜″ dowel pins, two in front and two in each side. The pins to be tight in the hood and a loose fit in the frames, so that the hood may be removed when necessary.

Now miter and glue in place the moulding at the base of the hood and secure with screws from the inside. Allow the moulding to extend ⅝″ above the base. The hood bottom,

The Completed Clock.

Material.

Mahogany—

1 hood moulding—60x1⅝x2
2 hood liners—11¾x1⅝x⅞
1 hood liner—20x1⅝x⅞
2 hood doors—10⅞x6⅝x½
2 half columns—63⅛x2″ diam.
2 front columns—63⅛. See detail.
2 side panels—45x7x⅜
1 dial frame—See detail.
2 hood top pieces—15x13x½
2 side stiles—65⅛x1⅞x⅞
2 side stiles—65⅛x1¾x⅞
2 side rails—9¼x5x⅞
2 side rails—9¼x3x⅞
2 side rails—9¼x2⅛x⅞
2 front stiles—65⅛x1⅞x⅞
1 front rail—18½x3⅜x⅞
1 front rail—18½x1⅞x⅞
2 door stiles—60½x1⅝x⅞
2 door rails—15x1½x⅞
1 door rail—15x1⅝x⅞
1 base front—22x6½x1¾
2 base sides—12¾x6½x1¾
1 hood base front—21¾x2½x⅞
2 hood base sides—12¾x2½x⅞
1 hood front—21¾x7x⅞

Poplar—

1 base liner—18½x4½x⅞
2 base side liners—9¼x4½x⅞
1 bottom—18½x10½x⅞
2 hood bottom pieces—21¾x6½x⅜
1 back—72⅜x18½x⅞
3 rabbet strips—16x1¼x⅞

Hardware—

3 hinges for large door.
4 hinges for side door.
1 mortise lock.
2 catches for hood.

made in two pieces with an open joint, may now be screwed in place, the open joint taking care of any possible shrinkage. The hood front and back are triangular pieces, the front mahogany and back poplar. Lay out the back piece first, 21¾″ at the base and 6⅞″ high. At the center draw lines from the high point to the extreme edge. Parallel with these lines and ½″ lower, draw knife lines, cut and plane carefully to these lines and use this piece as a pattern for the front.

These pieces are now screwed down on the hood. The moulding is now mitered and screwed in place, allowing it to extend ¼″ above the hood front.

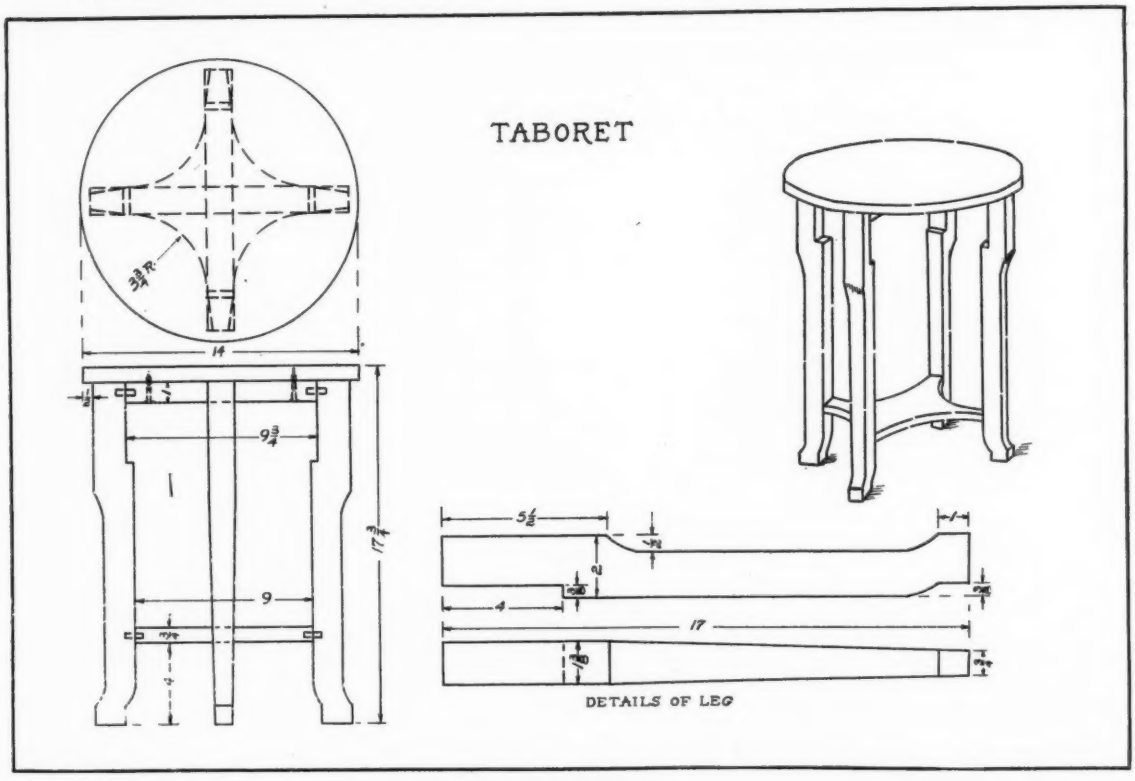
The top is dropped in place and nailed with light finishing nails. The grain of the top should run parallel with the moulding. The rear half columns extend over the sides the thickness of the back. (See sec. AA-BB.) The front columns are recessed out 1″ each way to allow them to close over the corners of the case. (See sec. view.) The columns may be screwed with screws.

The large door may have an oval glass as seen in the cut or the whole panel may be glass; the latter will be much easier to install. If the oval glass is decided upon, a three-ply panel at least ⅛″ thick must be provided and a corner milled out on the inside of the oval to receive the glass. A plain, solid panel would be very likely to crack at the top and bottom.

The stiles and rails of the door are to be rabbeted out to within ¼″ of the edge both inside and out. The inside for the glass or panel and the outside to allow the door close over the frame. (Sec. AA-BB.) Ample clearance should be allowed where the door enters the frame, as the varnish will cause the door to bind if it fits too neatly; 1-16″ all around will be plenty. The hinges should be extra wide and set well out to allow the rabbeted edge to clear the frame. It is advisable to use three hinges.

The dial frame made as shown fits tightly between the two front stiles and against the rabbet strips. The dial is fastened to the inside of this frame. Three rabbet strips are necessary for the dial frame to rest against, two at the sides and one at the top. (See sec. AA, numeral No. 7.) These are screwed in place.

The side doors fit the spaces 10½″x6⅝″ at top and ½″



DETAILS OF TABORET.

thick, dropping back about ¼" from the edge. Strips are to be fastened on the inside for the doors to strike against. The back may be paneled or made in one piece of well seasoned poplar.

TABORET.

L. Day Perry, Supervisor Manual Training,
Joliet, Ill.

Of taborets there is no end, and of poorly designed ones there is likewise no end. The one shown attempts to demonstrate how form work may be introduced in producing one of good form and proportion. It requires considerable band saw experience, but after a number similar in design and construction had been made by eighth-grade boys the instructors concluded that form work is within the province of boys in the elementary schools. The work on this problem and on others demonstrated that problems involving simple form work is not too difficult for boys in the eighth grade and lower. Form work also permits pleasing variations from the stereotyped work found so commonly in the average manual training shops. It should be encouraged always.

In making the taboret a pattern of thin wood or heavy paper should be made first, from which the legs are marked after squaring up to full width and thickness. The taper does not require a pattern, but may be marked off in the usual manner. Note that there is no slant on the inner surface of the legs. If there were it would necessitate angle cutting on the shoulders of joints. This would be rather difficult for the average boy. The cross lap joint on the cross pieces furnishes necessary experience in joint cutting, and the shelf introduces form work of a slightly different character. The assembling is by means of dowels, and the top is fastened securely to the base with wood screws as indicated in the drawing.

This taboret requires careful, exact work and gives to the boy a variety of experiences with chisel, saw, spoke shave, making of patterns, etc., which may not be had in constructing taborets of the usual kind.

Taboret Designed in the Author's Classes.

NEW BOOKS.

The Food of Working Women in Boston.

By Lucille Eaves. Cloth, 213 pages. Price, $1 net. Women's Educational and Industrial Union, Boston.

This book is a thoro study from the standpoint of social and economic welfare of a fundamental problem in the life of working women—their food. The study was chiefly confined to Boston and includes certain statistics gathered from seven other large cities. The extent of the problem may be better understood perhaps if it is said that one-half of the young women of Boston are workers and one-third of these human wage earners at the age of 14 or 16. Seventy per cent of these workers take lunches away from home at noon. The book takes up in detail (a) the noon lunches; (b) food of women living away from their families; (c) the food of women in organized homes; (d) the food of certain dispensary patients. The book proves beyond a doubt the principle that vocational education must include training for homemaking as well as for wage earning. It proves also that domestic science teachers especially in trade and continuation schools must give thoro instruction in diet and must make systematic efforts to encourage girls to apply their knowledge at home and outside the home wherever they eat.

The book deserves to be read by all domestic science teachers who are interested in the broader aspects of their work.

Practical Concrete Work.

By H. Colin Campbell and Walter F. Bayer. Cloth, 164 pages. Price, $1.50. Published by H. C. Campbell, at 824 N. Ridgeland Ave., Oak Park, Ill.

Concrete as a manual training medium is of so recent development that but few schools have availed themselves of its advantages. Inability of teachers to find means of studying the technique of handling cement has been the single drawback to its general introduction. The present book is an elementary text and has been evolved as a result of the experience gained by the authors in teaching the principles and processes of concrete to high school classes and teachers. After describing the materials used in concrete construction, tools and forms, the authors take up the processes of mixing and finishing. The special operations of making walls, walks and floors, and such small objects as posts, tanks, blocks and ornamental garden furniture are then taken up. Re-enforcing and curing of concrete complete the text. Thruout the book there are numerous suggestive illustrations, working drawings and tables. The problems are well graded and show considerable attention to good design—a detail which has been so much neglected in the past.

Experimental Study of Motor Abilities of Children in the Primary Grades.

By Buford J. Johnson, Ph. D. Paper, 62 pages. (Johns Hopkins Studies in Education.) Published by the Johns Hopkins Press, Baltimore, Md.

This study was made during a period of seven months and sought to determine (a) the rate of voluntary movements; (b) steadiness of motor control; (c) reaction time; (d) accuracy of movement and (e) preference of side of body used.

Machine Wood Working.

By George Henry Jensen. Paper, 20 cents. Published by the Industrial Arts Department of the City Schools, Stockton, Cal.

This book is a rather complete text for students in machine-equipped woodworking shops and describes the construction, use, operation and care of all the general types of machines found in woodworking establishments. The author has developed the material thru observation of standard trade practices and has used it for some years in his classes. Much emphasis is laid upon safety thru the use of guards and the observance of methods that will prevent accidents. The book, of which the author has a few copies for distribution to colleagues, is neatly printed by the students of the Stockton Prevocational School.

PUBLICATIONS.

The Propagation and Pruning of Plants. Prepared by H. P. Barrows, specialist in agricultural education. Issued by the States Relations Service, United States Department of Agriculture. The pamphlet aims to assist teachers in secondary schools to present the subjects in an interesting and effective way to pupils. It outlines classroom instruction in both subjects and suggests practicums, projects and discussions. The section on pruning covers principles, pruning of fruit trees, small fruits, ornamentals, and shade trees.

Opportunities for History Teachers. The Lesson of the Great War in the Classroom. Teachers' Leaflet No. 1, 1917, United States Bureau of Education. This pamphlet was prepared by the National Board for Historical Service, with a view of suggesting certain aspects of history, ancient and modern, which have gained a new interest in the light of the great war. The suggestions relate to ancient history, medieval and modern European history, English history and American history.

Department Store Education. By Helen Rich Norton. Paper, 79 pages. Price, 25 cents. A very modest account of the training methods developed by the pioneer school of department store salesmanship in Boston under the direction of Mrs. Lucinda W. Prince. The booklet is valuable as a history of the school and as a statement of the scope and character of the training offered.

NOW, ARE THERE ANY QUESTIONS?

This department is intended for the convenience of subscribers who may have problems which trouble them. The editors will reply to questions, which they feel they can answer, and to other questions they will obtain replies from persons who are competent to answer. Letters must invariably be signed with full name of inquirer. All questions are numbered in the order of their receipt. If an answer is desired by mail, a stamped envelope should be enclosed. The privilege of printing any question and reply is reserved. Address, Industrial-Arts Magazine, Milwaukee, Wis.

Furniture Transfers.

719. Q.—Is there not some method of transferring pictures to finely finished woodwork for ornamental purposes?—*K. M. D.*

A.—Transfers may be bought from the Myerscord Manufacturing Company (Decalcomania), Chamber of Commerce Building, Chicago, Ill.

Old Mahogany Finish.

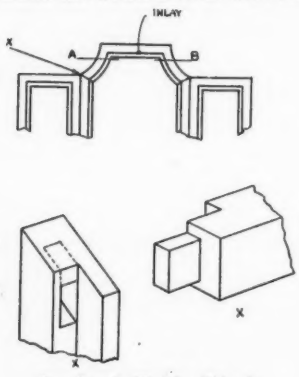
721. Q.—What is the best method to color new mahogany the color of the old mahogany?—*H. C.*

A.—I would suggest that the finished pieces be carefully sandpapered after sponging with clear water to raise the grain and then placed in a box or other receptacle which should be filled with the fumes from a pan of strong ammonia. The mahogany should remain in this ammonia gas for 24 hours and develops a grain in a manner quite impossible otherwise. This should be followed by a stain made from two ounces of potassium bi-chromate and one-half ounce Bismark aniline brown (water soluble) to one gallon of boiling water. The stain should be sponged on hot and after thoroly drying should be sanded perfectly smooth with fine paper. Following this the work should be gone over with a thin coat of orange shellac reduced one-half with alcohol. After this has dried three hours, fill the work with a Silex filler, colored with VanDyke brown in oil, and slightly tinted with rose lake in oil so as to produce a rich brown chocolate color. This should be thoroly rubbed in across the grain with an old stubby brush and when set should be wiped clean across the grain with pieces of burlap. After twenty-four hours, sand with the grain with worn out 00 paper to remove any superfluous filler and hairs from the burlap. Dust off, remove to a clean, warm room and apply a well brushed coat of varnish. After three days' drying, sandpaper lightly with 00 paper, dust off and give a second coat. This may be repeated up to four coats, the last coat being rubbed out with felt pad, pumice stone and water. Polish with rotten stone and water if desired. When clean, chamois dry and clean up with good oil polish.—*Ralph Waring.*

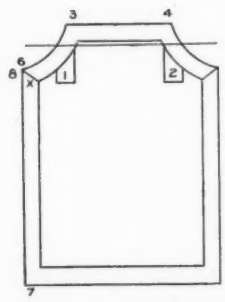
Mending a Mirror Frame.

725. Q.—While in school I made a three-section mirror frame for a dressing table. In sending it home it was broken thru line A-B, also the joint at X. It is of mahogany inlaid and I don't know how to set about repairing the damage. Can you help me? The entire frame is well made and "flanged"—mortise and tenon joints were used—and I am anxious to do a good repair job. Dotted ink line shows how joint is broken. I think I could come nearer mending the joint than I could the broken places of the top part thru A-B.—*J. R. B.*

A.—In suggesting a method for repairing this mirror frame the writer does so with the realization that "The cure may be worse than the disease." The most logical thing to do if material and equipment are to be had would be to replace the top piece entirely. If the re-finishing were carefully handled, the mirror would be absolutely as good as new. Local conditions may not permit this, and therefore the following procedure is suggested:



Questioner's Sketch of Break.



Sketch showing application of Clamps.

Re-fill the mortise at X and re-work. Glue the joint X together by drawing a bar clamp from point six to seven, and at the same time a hand clamp from one to eight. After the glue is set, put the top pieces in place and draw a hand clamp across at one and three, and another at two and four. At points one and two wooden blocks are glued on to the piece in order to give a straight gripping surface for the clamps.

The whole top must then be carefully re-finished to make the breaks as nearly invisible as possible.—*Wm. P. Taugher.*

Books on Toy Making.

726. Q.—Will you kindly publish the names of books on Toy Making?—*E. A. F.*

A.—*Miller's Kitecraft and Kite Tournaments*, $1.50, Manual Arts Press, Peoria; *Hall's The Boy Craftsman*, $1.80, Lothrop, Lee & Shepard, Boston; *Hall's Home Made Toys for Girls and Boys*, $1.25, Lothrop, Lee & Shepard, Boston; *Eden's Toy Making for Infants*, $1, Isaac Pitman & Sons, New York; *Beard's Jack of All Trades*, $1.50, Scribner & Sons, New York; *Toy Making*, $0.50, Funk & Wagnalls, New York; *Stout's Boy's Book of Mechanical Models*, $1.50, Little, Brown & Co., Boston; *Marten's Manual Training-Play Problems for Boys and Girls*, $1.25, Macmillan Co., New York; *Rich's When Mother Lets Us Make Paper Box Furniture*, $0.75, Industrial Book & Equipment Co., Indianapolis; *Lukin's Toy Making for Amateurs*, L. Upcott, Gill, Bazaar Office, 170 Strand, W. C. London; *Johnson's Coping Saw Work*, $0.20, Manual Arts Press, Peoria; *Moore's Manual Training Toys for the Boy's Workshop*, $1, Manual Arts Press, Peoria; *Sage's Toy Animals I Can Make*, $0.35, Platt & Peck, New York; *Earliest of the Toy Books*, $3, World Book Co., Yonkers, N. Y.; *Booth's Toys and Things*, $1, Geo. H. Doran, New York; *Paper Toys and How to Make Them*, $0.60, Stokes & Co., New York; *Rich's When Mother Lets Us Make Playthings*, $0.75, Moffat, Yard & Co., New York; *Polkinghorne's Toy Making in School and Home*, $2, Hubbell-Leavens Co., New York; *How to Make a Toy Motor*, $0.10, Bubier Publ. Co., Lynn, Mass.; *St. John's Real Electric Toy Making for Boys*, $1, T. M. St. John, New York; *Sloane's Electric Toy Making for Amateurs*, $1, N. W. Henley Co., New York, *Allen's How to Make a Magic Lantern*, $0.10, Tousey & Co., New York; *Anderson's How to Make Magic Toys*, $0.10, Tousey & Co., New York; *Craigin's Boy's Workshop*, $1, Lothrop, Lee & Shepard, Boston; *Toy Model Book*, $0.25, E. P. Dutton & Co., New York; *Jackson's Toys of Other Days*, $7.50, Scribner & Sons, New York; *A-B-C of Toys*, $0.20, McLoughlin Bros., New York; *Goldsmith's Practical Things With Simple Tools*, $1, Sully and Kleinteich, New York; *Amateur Mechanics Series*, $0.25 each, Popular Mechanics Co., Chicago; *Boy Mechanic Series*, $2 each, Popular Mechanics Co., Chicago.

Silver-plating.

728. Q.—Where can I procure instruction in making apparatus for, and plating small articles in manual arts school?—*A. G. W.*

A.—*Bedell's Practical Electro-plating*, $2, Hanson & Van Winkle Co., Newark, N. J.; *Urquhart's Electroplating*, fifth edition, $2, D. Van Nostrand Co., New York; *Reetz's Electro-plating*, $0.25, Popular Mechanics Co., Chicago; *Hawkins' Polishing and Plating of Metals*, $2, Hazlitt & Walker, Chicago; *Weston's Up-to-date Electro-plating*, $1, F. J. Drake & Co., Chicago.

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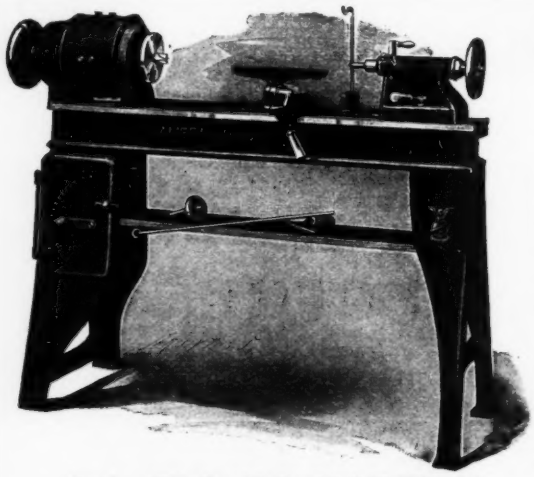

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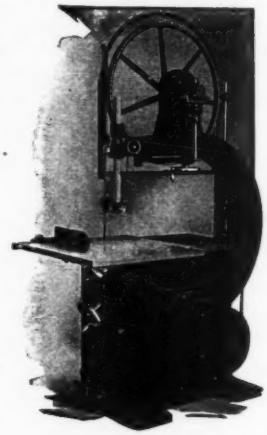

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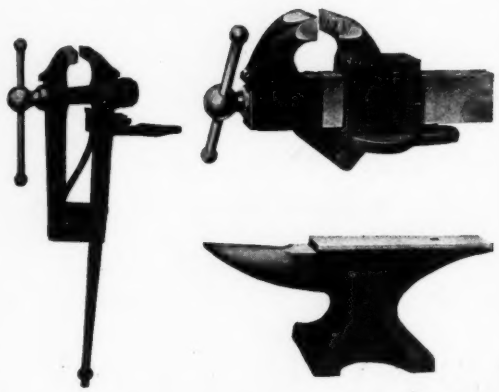

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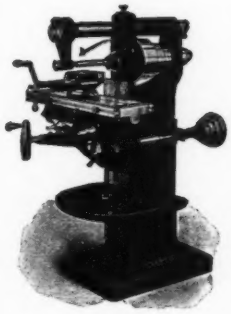

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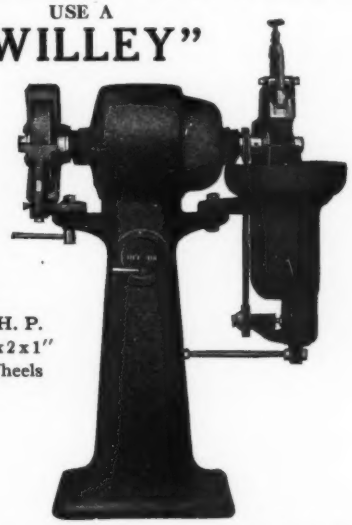

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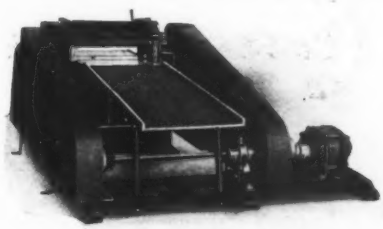

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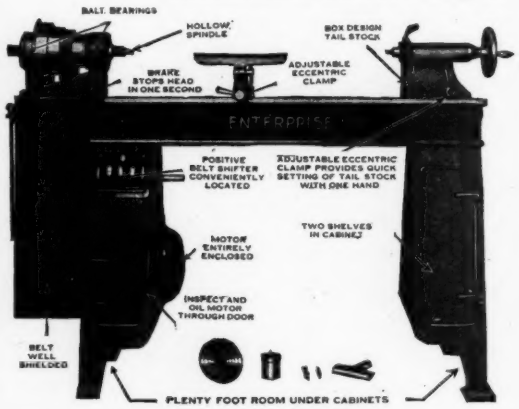
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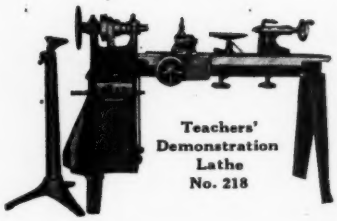

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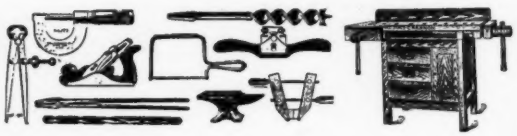

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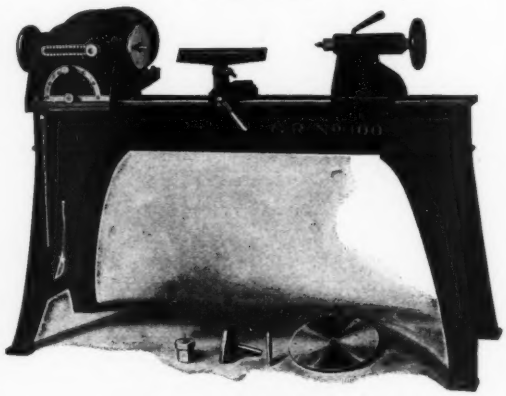

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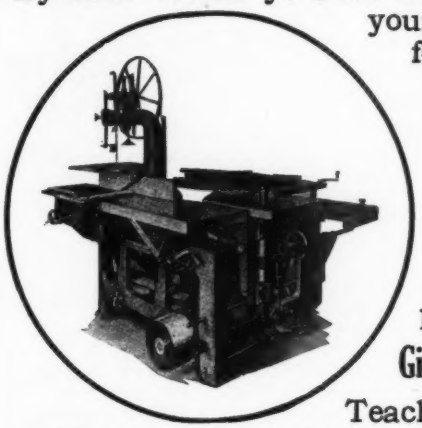

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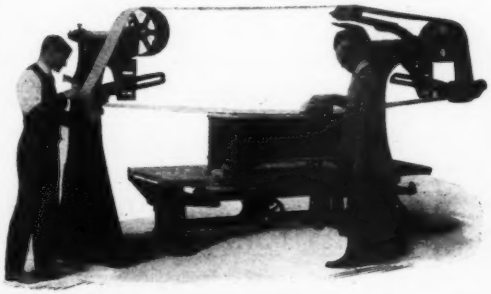

Does the work of several types of Sanders

—this means a big saving in investment, floor space and rehandling of stock.

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Both ends of the machine are open, which permits the sanding of very long work. Small pieces can be held free-hand against the roll or platen at left of machine.

This No. 134 can be equipped for individual motor drive.

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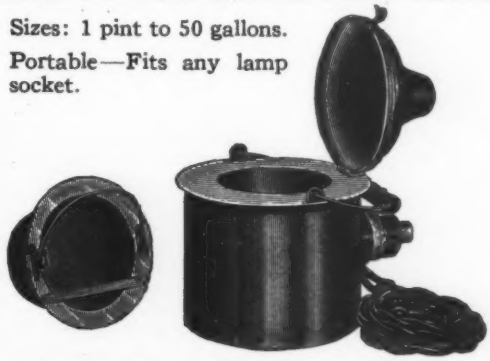
ELECTRIC GLUE HEATERS

Sizes: 1 pint to 50 gallons.

Portable—Fits any lamp socket.



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Maintains correct temperature at all times.

Three heats—high, medium and low.
Cost of current less than one cent per day.

Spun copper, no seams or soldered joints.
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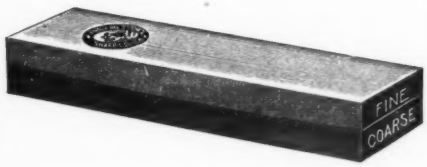

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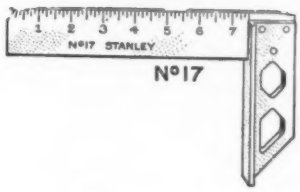

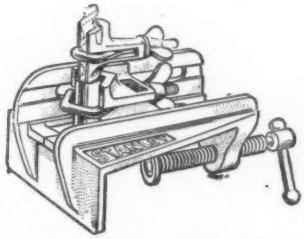

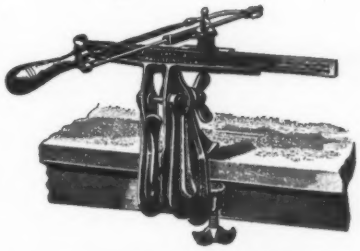

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All wants are subject to approval. Forms close 25th of month preceding issue.

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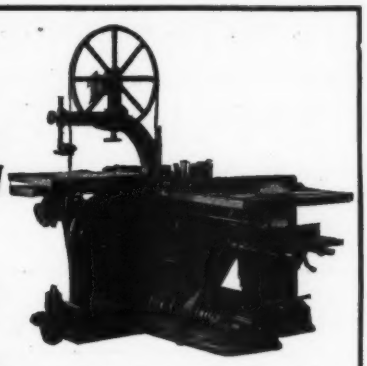

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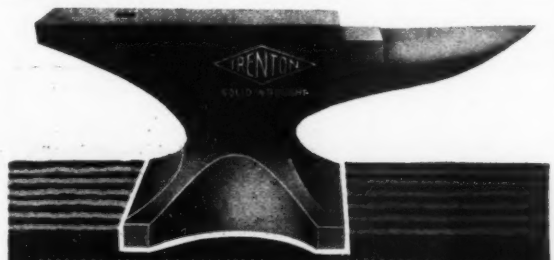

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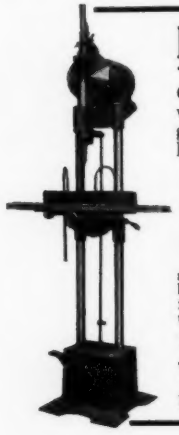

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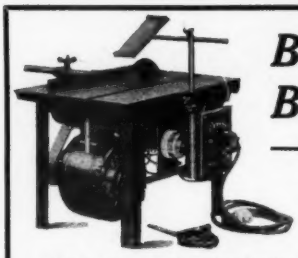
See Page VIII for further information.



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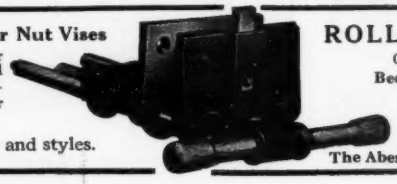

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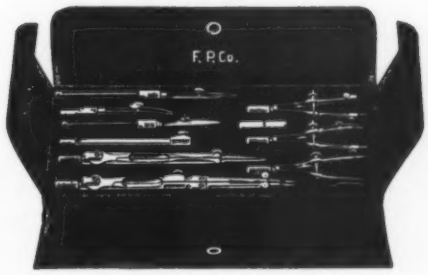

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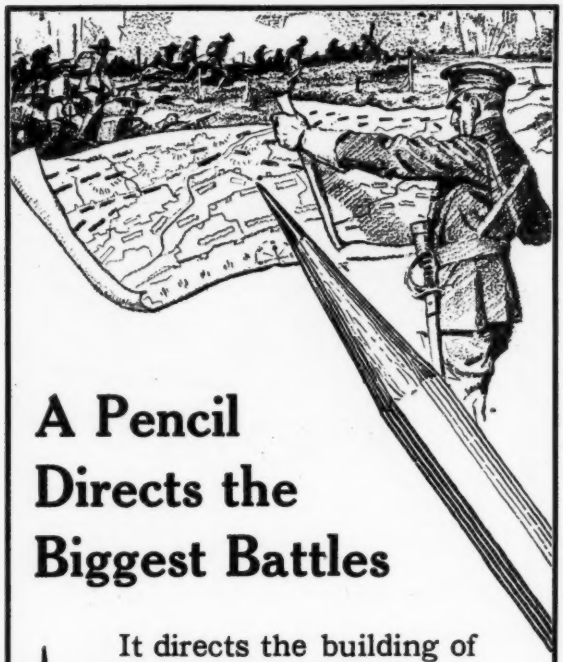

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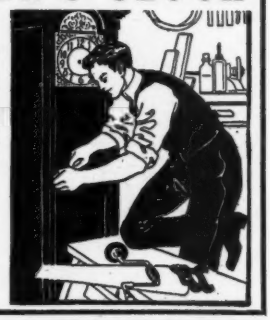

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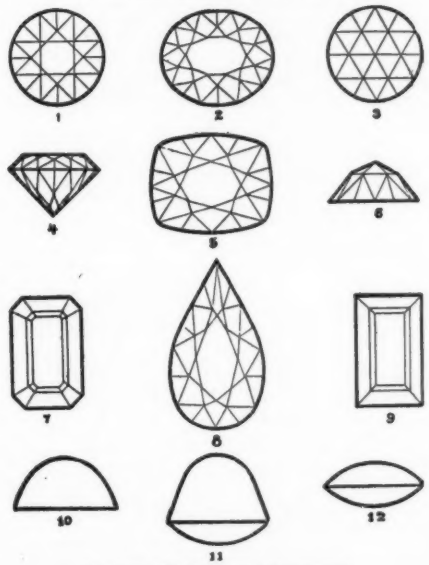

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A MESSAGE FROM PRESIDENT WILSON!

(Extract from "The Chicago Tribune" of Oct. 2, 1917)

PRESIDENT WILSON ASKS THAT SCHOOLS INSTRUCT IN NEW PROBLEMS

URGES MORE ATTENTION TO PROBLEMS OF COMMUNITY AND NATIONAL LIFE

Washington, Oct. 1.—President Wilson has sent the following letter to School Officers from the White House:

"The War is bringing to the minds of our people a new appreciation of the problems of National life and a deeper understanding of the meaning and aims of Democracy. *Matters which heretofore have seemed commonplace and trivial are seen in a truer light.*

"In these vital tasks of acquiring a broader view of human possibilities the Common School must have a large part. *I urge that teachers and other School Officers increase materially the time and attention devoted to instruction bearing directly on the problems of community and National life.*"

WOODROW WILSON.

WHAT IS YOUR ANSWER?

No other subject in the school curriculum "bears so directly on the problems of community and National life as the subject of "Industrial Art."

President Wilson says "I urge that teachers and School Officers increase materially the time and attention devoted to instruction in such subjects."

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SUBSCRIPTION INFORMATION.

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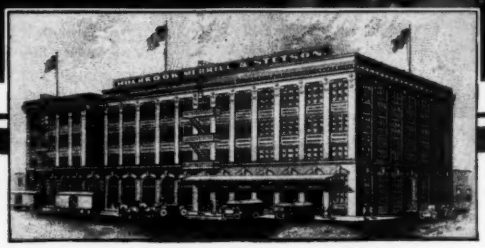
EDITORIAL CONTRIBUTIONS.

The Board of Editors invites contributions of all kinds bearing upon the Industrial-Arts Education, Manual Training, Art Instruction, Domestic Science, and related subjects. Unless otherwise arranged for, manuscripts, drawings, projects, news articles, etc., should be sent to the Publication Office in Milwaukee, where proper disposition will be made. The Board of Editors meets once or oftener each month in Chicago, and all contributions submitted are given careful attention. Contributions when accepted are paid for at regular space rates. In all cases manuscripts should be accompanied by full return postage.

The Industrial-Arts Magazine is on sale at Brentano's, 5th Ave. and 27th St., New York City; John Wanamaker, Market St., Philadelphia; A. C. McClurg & Co., 218 S. Wabash Ave., Chicago.



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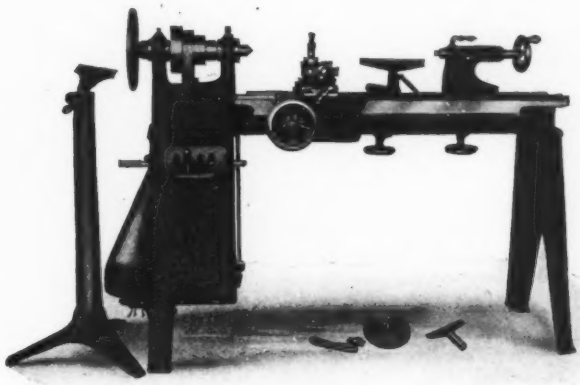

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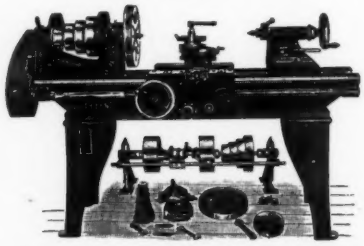

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THE BOSTON MANUAL TRAINING CLUB MEETING.

The first meeting of the Boston Manual Training Club was held at Wentworth Institute on October 20th. The meeting started in the morning when an inspection of the school was made. At 12:30 a delightful luncheon was served to about eighty members. At 2:00 o'clock the meeting adjourned to the assembly hall and one of the most interesting programs the club has ever had took place. On motion of Mr. Morris, of Boston, the reports of committees was postponed to be taken up at the next meeting because of the length of the program. The president then read the names of the officers for the coming year, as follows:

President, Edward C. Emerson.

Vice-President, George M. Morris.

Secretary, Andrew J. Leahey.

Treasurer, George F. Hatch.

The executive committee consists of John Brodhead, Clarence M. Hunt, Frederick W. Ried, George C. Greener, Francis L. Bain, and Lester E. Markham.

The following were elected to membership: Active—A. L. Dix, Melrose, Mass.; C. H. Garland, Hyde Park, Mass.; C. H. B. Morse, West Roxbury, Mass. Sustaining—C. L. Kingston, Hyde Park, Mass.

Mr. Arthur L. Williston gave a hearty word of welcome, telling us about the great work Wentworth accomplished this summer with the 101st Engineers' Corps that was formerly the First Corps of Cadets, the crack regiment of Boston. These men were encamped on the grounds of Wentworth before going "somewhere else in America." Mr. Williston supplemented his remarks with lantern slides showing dugouts, bridges, gun emplacements, etc., worked out on the grounds of the Institute and at Fresh Pond, Cambridge.

Prof. Samuel L. Conner, of the Department of Civil Engineering, Tufts College, Medford, gave an interesting account of the work at Wentworth with these same men in methods of military sketching and mapping. Mr. Conner had twelve years of experience in surveying and civil engineering before entering the teaching ranks. He mapped out with the men much of the trench work at Fresh Pond, aided by the ideas of the French officers there. He believes that much of the work of surveying could be approached in such a way as to be in the grasp of the boy of high school age. He believes that the athletic field spirit could be brought into use in this line of work and keen interest developed.

Military structures for woodworking classes were sketched out on the board and explained by John A. Mickelson, instructor in woodworking at Wentworth Institute. His ideas on trusses, splices, timbers, gun emplacements and dugouts showed he had done yeoman work with the 101st Engineers' Corps.

Mr. Walter C. Voss, instructor in architectural construction at Wentworth, gave interesting data on the monolithic and unit system methods in cement construction. He explained about gun emplacements, dugout work, culvert work, etc. That his talk was greatly appreciated was evidenced by the generous applause he received.

Mr. Milton J. Kirkland, of the Association of Portland Cement Manufacturers, Chicago, invited everyone to get in touch with his association for teaching data and help of any kind in regard to cement and its constructive side for school use. Mr. Williston followed with a talk on Further Co-operation with the Army and Navy. Mr. Charles Allen, having been called to Washington on government work, was unable to be present. Mr. Tukey, of the Charlestown Navy Yard, substituted for Mr. Allen at his request. Mr. Tukey gave a resume of some specific things which manual training teachers may do in the line of woodworking. His talk was unofficial and he was unable to say even that the government would consider the proposition of school-made articles. He suggested, however, definite wants that must be filled from some source such as keyboards, bathtub seats, tent pins and stakes, sail makers' benches, material chests, ridge poles, etc.

The discussion was thrown open to the house. It was suggested that a clearing house be established for the disposal of school-made war materials. It was even suggested that the club discontinue its official organ temporarily and appropriate that money for the expense of this clearing house.

Mr. Crawford, principal of the Boys' Trade School, punctured the idea as he thought it would be foolish to do away with the club organ. He thought whatever could be made by boys would be only a drop in the bucket. Whatever was made should be put in the market at a proper profit, to cover overhead in disposing of goods and in competition with other goods. He said there was only one justification for it anyway and that was to vitalize the work and make the boys feel that they were doing something toward war service.

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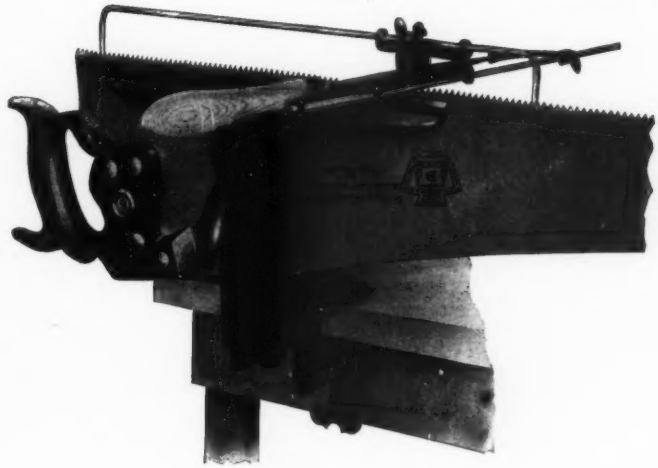

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On motion of Mr. Ried, the matter was referred to the executive committee to be reported on at the next meeting. The meeting then adjourned after a very fruitful and truly "war program."—*Frederick W. Ried.*

Club Notes.

Mr. Max Rabus has entered the New York service. Mr. Rabus will be greatly missed by the Club.

Mr. L. Frank, formerly of the Manual Arts Office, Boston, has left the teaching ranks and is now a designer for a large textile firm.

Edward D. Dee, one of Boston's best known prevocational instructors, is editor of a Concord, Mass., paper and chairman of the school board. He is also proprietor of a large printing establishment there.

F. W. Ried, of the State Normal School, Framingham, Mass., is one of the few teachers elected to membership in the "Beachcombers" of Provincetown, Mass. Mr. Ried is also a printer. His business goes under the name, "The Ried-Craft Press."

Mr. Wm. B. Hazelton has been appointed instructor in woodworking in the Browne and Nichols School, Cambridge, Mass., and the Beacon School, Boston.

Mr. Herman Hall has become an active member of the club again. His work in Framingham High School is of a high order, showing virility and constructive knowledge of unusual strength.

The program of the Manual Training Club was the work of the Wentworth Institute Department of Printing. As an example of good design, imposition, color and presswork, it will be hard to beat.

NEW YORK INDUSTRIAL-ARTS TEACHERS MEET.

The fine, industrial and household arts teachers of New York state will hold sectional meetings November 26, 27 and 28, 1917, in connection with the convention of the State Teachers' Association. Pres. Wm. P. Kamprath will preside at the meeting, assisted by Miss Lillia Olcott, Mr. Alfred H. Bingham and Miss Ethel M. Newlands.

At the general meeting, Mr. Arthur Dean of Albany will speak on "Mobilization in Our Schools." "The Relation of Prevocational Education to Vocational Education" will be discussed by two speakers to be announced later. At the fine arts section, Miss E. May Crandall will talk on "Successful Problems;" Miss Lou Messenger on "Designing and Making Rugs;" Mrs. Catherine Couch on "Added Opportunity for Talented Children;" Miss Mathilda Miett on "Sunshine Club Work in Syracuse;" Harry W. Jacobs will give an illustrated talk on "Pencil Technic for Intermediate Drawing;" Miss Marjorie Parce will speak on "Teaching by Store Windows;" Miss Rose Acker on "Pupils' Rooms" and Miss Carrie Harmon on "Beauty and Economy in Dress." "The Relation of Prevocational Education to Vocational Education" will be discussed at the industrial arts section. At the household arts section, Mrs. Arthur Hurrell speaks on "The Woman Who Works in the Home;" Miss May B. Van Arsdale on "Home Economics for a National Emergency;" Miss Helen Hildreth on "The Evening School Unit Courses" and Miss Martha Van Rensselaer on "The Library in Its Relation to Household Arts."

INDUSTRIAL-ARTS ROUND-TABLE CLUB HOLDS MEETING.

The Industrial-Arts Round Table Club held its first meeting of the year October 5th, at Chicago, Ill. Pres. L. W. Wahlstrom presided at the meeting, which followed a membership dinner.

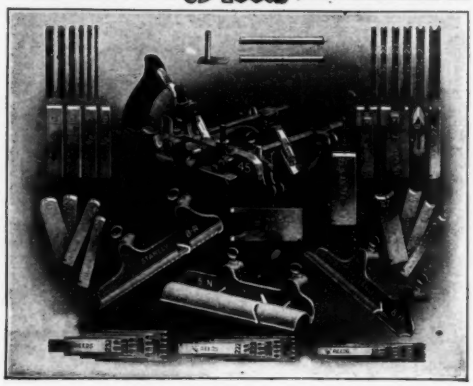
Mr. Wahlstrom opened the meeting with a brief talk on the plans and possibilities for the club during the coming year. Mr. E. L. Valentine, of Lane Technical High School, acted as leader of the discussion on architectural drawing.

A second meeting was held November 10th at Pullman Manual Training School, Pullman, Ill.

WILL MEET IN FEBRUARY.

The Emergency Committee of the Illinois Manual Arts Association has fixed March 22 and 23 as the dates for the annual convention. Mr. Heman J. Barber, who is acting as secretary-treasurer and as ex-officio chairman of the committee, has announced that a strong campaign will be made for securing a large attendance at the convention. The Chicago Manual Training Club will send a delegation, and a large number of men is expected from the central and southern parts of the state. It is planned to make the program especially timely in view of the new problems which have been thrust on the schools thru the Smith-Hughes Act, and the entry of the United States into the European War.

Stanley Tools



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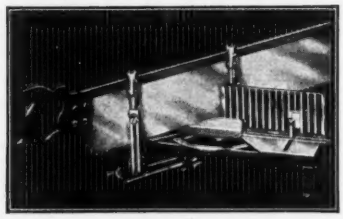

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We'll be glad to tell you more about it.

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THE WAR AND THE SCHOOLS.

The public schools of Toledo, O., have undertaken a number of activities in the direction of war service. The Domestic Science Department has emphasized in all its work the conservation of food, the use of food substitutes and the promotion of universal economy. During the past summer the teachers co-operated with various societies in practical demonstrations of canning and preserving.

In the day and evening schools, classes in telegraphy and wireless work have been formed with large enrollments of students. A course in the theory and construction of automobiles has been introduced for those who may be interested in the operation of automobiles.

The students in the Domestic Arts Department of the high school have made various garments and knitted a number of sweaters. In the grades, the pupils have made some of the simpler Red Cross articles.

The Worcester Trade School at Worcester, Mass., has introduced nine different trades including machine shop work, cabinet making, pattern-making, carpentry, electricity, steam practice, drafting, printing, painting and decorating. Each of the courses covers four years; one half the time being devoted to actual shop-work and the remainder to academic work closely connected with the trade selected. Athletic work is compulsory for all students.

The United States Food Administration at Washington, D. C., has issued a series of three pamphlets on Community and National Life for general classroom use in schools. The leaflets are of three kinds, one for the upper classes of high schools, one for the upper grades and the first year of high school, and one for intermediate schools.

The first lesson leaflet shows the large demands of war in the way of food, ammunition, clothing and raw materials and shows the necessity for co-operation in every line of work in order that the work may progress satisfactorily. The second one is an object lesson in importing. It compares the manner of trading in colonial times with modern commerce on the high sea, and work in the industrial centers. The third leaflet discusses the evolution of the flying machine and its connection with various lines of business. A feature of this lesson is a description of the old time method of spinning and weaving cloth and an explanation of the method now in use.

Duluth, Minn. Plans have been made for the opening of evening schools in telegraphy.

Austin, Minn. The Domestic Science Department has reserved one day each week for Red Cross work. Girls are learning to knit.

What patience and perseverance on the part of a teacher in a small district school can accomplish is demonstrated by the exhibit of canned and dried products made by the Green River School of Windham County, Vermont, early in October.

The exhibit was the result of work started by eighteen pupils in planting time last spring under the direction of their teacher, Miss Leila Gallup. The products were raised on one-third of an acre of ground, each child having a particular plot. The harvest included thirteen and a half bushels of potatoes, 47 quarts of beans, two bushels of tomatoes, one bushel of cucumbers and a few minor vegetables such as vegetable peaches, cow horn potatoes and onions. The total cost of the garden was forty cents.

With the aid of a gasoline stove, the pupils canned twelve quarts of corn, seven quarts of tomatoes and five quarts of pickles which were raised in the garden. In addition to this work, Miss Gallup has taught cooking and sewing to the girls and goes into the homes to instruct the mothers.

Indiana University at Bloomington offers training courses for men desirous of fitting themselves for signaling work. One course is intended for wireless and telegraph operators and another will train men for commissions.

Minneapolis, Minn. A night course in Red Cross work has been introduced at the Girls' Vocational Night School.

Vocational schools for the training of shipbuilders and the organization of a flow of labor to shipbuilding centers are proposed following a conference of New England shipyard officials.

Milwaukee, Wis. A school of telegraphy has been opened at the Milwaukee Technical High School.

Boston, Mass. A class in radio and telegraph operating has been formed at the North Bennet Street Industrial School.

La Crosse, Wis. A telegraph school for women has been opened. Sixty students are enrolled.

The usual activities in the domestic science departments of Minnesota schools have been suspended in order that girls may be taught to prepare the various war foods.

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Louisville, Ky. A school of telegraphy has been opened at the Prevocational School for the training of drafted men.

Beloit, Wis. The high school has introduced a preparatory course in telegraphy.

Minneapolis, Minn. The students of the Girls' Vocational School have made comfort bags, hospital shirts and bath robes. The next work will be shelter tents and shirts.

Menominee, Mich. The girls of the sewing classes in the Junior High School have undertaken the making of hospital shirts for the Red Cross.

The country schools of Wisconsin recently gave the children days off so that they might assist the farmers in harvesting the crops. In some cases, an entire week was given. An intermittent term system is operated and the children will be given the full eight months' instruction. The schools have introduced domestic science and are giving special attention to food conservation.

Printing, linotyping, monotyping, automobile maintenance, telegraphy and cabinet work are among the courses open to women at the Lane Technical High School, Chicago. These courses are intended to provide training for women who are to replace men in the trades.

Twenty-two varieties of war bread were exhibited recently at the Cutler School, West Somerville, Mass. A number of the varieties had no white flour in them and the others only a small quantity.

Anderson, Ind. Courses in telegraphy and machine shop practice are offered for young men of draft age.

Buffalo schools began Red Cross work last February with the organization of branches in a number of buildings. The children during the spring and summer made more than one thousand garments for hospital uses.

The Chicago high schools have adopted the war honor plan as a means of permanently recording the names of students who have entered government service. Lane High School has lost 250 boys, Austin 100, and the remainder similar quotas.

The German class in the high school at Dunkirk, Ind., has bought a Liberty Bond and will dispose of it as follows: The annual interest will go to the American Red Cross Society; the bond will be given to the board of school trustees to be expended when matured, in the purchase of a statue of some American hero, to be placed in the building which shall house the high school at that time.

The Domestic Science Department at Horicon, Wis., has organized a knitting club to which junior and senior girls belong. The sewing classes are giving a part of their time to the making of pajamas for the soldiers and sailors.

President C. R. Van Hise, of the University of Wisconsin, has reported that 74 members of the faculty and instructional staff of the University are absent in various kinds of war service. About 94 members, other than those with commissions, have given all or a large part of their time to war work. The first group will continue in the work for a part or all of the year.

Spokane, Wash. The knitting class of the Lewis and Clark Night School has made sweaters and socks for the army and navy.

At a recent meeting of prominent physicians and surgeons of the country, held in October at Chicago, it was claimed that the re-education scheme for training disabled soldiers is to be the most elaborate to be undertaken by any nation. Not even Germany, with her efficiency in this line, will equal the work which is to be done by the United States. It is also planned to maintain these institutions for many years after the war.

The plan provides that in case a soldier loses an arm in the service, he will be given an artificial arm designed for use in the old trade. If a man is incapable of resuming his work in civil life some field will be found in which he can be useful and he will be re-educated with the aim of equipping him for his new career.

The President has given the movement his approval and support and has intimated that he considers nothing too good for the disabled soldiers of the United States.

Buffalo, N. Y. The Buffalo Normal School offers in its evening sessions, special training for teachers of vocations. Persons eligible to the course are those who are qualified because of special skill or satisfactory experience and who have such mental training as will render it possible for them to cover the academic work.

Bridgeport, Conn. Five hundred men and women enrolled at the State Trade Shop at its fall opening. The selection of subjects, in the order of popularity, was machine shop work, mechanical drafting, blueprint reading, plumbing, sheet metal work, shop mathematics, carpentry, pattern making, sewing and dressmaking.

With me the Printer's Craft was simply my joy and pride from the first things I knew of it. I know when I could not read, for I recall supplying the text from my imagination for the pictures I found in books; but I do not know when I could not set type. My first attempt at literature was not written, but put up in type and printed off by me.—WILLIAM DEAN HOWELLS.

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NEWS AND NOTES.

A co-operative training course in machine shop work has been introduced in the Bethlehem, Pa., high school. The students will include apprentices from the Bethlehem Steel Company and the Bethlehem Foundry and Machine Company.

The Wheeling, W. Va., Schools have established a course in pottery and are turning out commercial tableware and art products.

The pupils forming the classes are from the eighth grade and the high school, the latter being elective. Casting, pressing, throwing and turning, and decorating are taught in order.

The Boston Vocational Bureau has been re-named the Bureau of Vocational Guidance and its management has been transferred to the Division of Education of Harvard University, Cambridge, Mass. The Bureau is in charge of Mr. Roy W. Kelly, who succeeds Mr. Meyer Bloomfield as director.

The Bureau of Vocational Guidance will continue its relationships with the schools and organizations desiring to begin the work of vocational guidance. In addition it will seek to be of individual and public service in the reorganization of employment conditions arising from the war.

Maquoketa, Ia. Under the direction of Supt. R. M. Stookey, a class in telegraphy has been organized in the high school. The class is intended to prepare young men and women for service as military and commercial telegraphers, and was suggested by the United States War Department.

The schools of Winslow, Arizona, under the superintendency of G. E. Cornelius, have been reorganized upon the departmental plan with the acquisition of two new buildings including the new Froebel school and the South Side Mexican school. A new manual training and domestic science department has been installed in the grammar school and also in the Mexican school.

Omaha, Nebraska, has recently added a department of vocational and educational guidance to the high schools.

"The Weekly Scarab" is the title of a four-page weekly newspaper published in the East Technical High School, Cleveland, Ohio. The editorial work of the publication is done by the students of the English department and the printing is the work of the print shop. The paper is printed with a page 10½ by 14 inches, and has a type page of four columns of standard newspaper width.

Mr. Sam E. Woods, who is instructor of manual training and farm mechanics in the Mississippi Normal College at Hattiesburg, has recently reported to the Mississippi Department of Education on his work as special instructor at the summer normal schools. During the summer vacation of 1917, Mr. Woods visited eleven summer normal schools for white teachers and two institutes, and six normal schools for negroes and one institute. He gave general lectures on the teaching of manual training in country schools and demonstrated the making of the following projects:

Porch swings, model woodboxes, porch and window boxes, wheel trays, screen windows and doors, flytraps and swats, baby coops, fireless cookers, iceless coolers, playground equipment, sand piles, see-saws, giant strides, swings and parallel bars. Demonstrations were also given in the cutting of rafters and door step runners.

The county health officers reported over five hundred homes screened.

Mr. Woods also lectured on the repairing and applying of whitewash, the value and need of school hot beds and cold frames, the finishing of floors, and the care of schoolhouses and school yards. In all the meetings the teachers showed considerable interest and enthusiasm and 2,121 white teachers and 481 colored teachers promised to introduce the work in the schools during the fall session. He reports that his correspondence from teachers from all sections of the state indicates that the work is being very widely introduced.

The basis of Mr. Wood's instructions and course of study in manual training and farm mechanics for country schools was worked out in the Pearl River County Agricultural High School during several terms between 1915 and 1917. The teachers of Pearl River County attended regular monthly meetings at the Agricultural High School where projects were developed for them and they were given instruction in the teaching of manual training. The demonstrations were arranged to cover a seven-months' course and the work was tried out very thoroly in the schools of the county.

Forty-eight students of the West Philadelphia High School and the Northeast Manual Training High School, Philadelphia, spent four weeks in October as fruit pickers in Adams County, Pa. The boys were quartered in camps in charge of an experienced college man. The boys were directly under the supervision of the State Bureau of Vocational Education, and the work which they

did was intended as a war service in a district where farm help is extremely scarce, due to the industrial activities in the munitions and ship building lines.

At the Industrial Exposition held in October, at Springfield, Mass., the Industrial Training Team of St. Johnsbury, Vt., in competition with the states from Maine to Georgia, made almost a clean sweep of the awards and captured the championship for the North Atlantic States.

The highest award was given to one of the St. Johnsbury team, the sweepstake prize going to Warner Scribner on the rating given in individual entries, team judging, team demonstration and essay writing. The boys demonstrated the making of a concrete sidewalk, upholstery work, filing of saws, making of wooden spoons, knotting and splicing of ropes, and the caning of chairs. The team was kept busy in its spare time doing repairs and construction work.

Prizes were given for the best trap nests, wagon jacks, milking stools, knotting and splicing, poultry equipment, bird houses, brooders, fireless cookers, ladders and seed testers. Awards were also given for special optional work.

The team entered a total of 35 projects and drew 32 awards. In the team judging the team took third prize and in the demonstration contest the boys carried off first honors, thereby becoming champions of all the North Atlantic States, Massachusetts being second.

Preservation of Vegetables by Fermentation and Salting. By L. A. Round. Farmers' Bulletin 881, August, 1917, United States Department of Agriculture.

A First-Year Course in Home Economics for Southern Agricultural Schools. By Louise Stanley. Bulletin 540, July, 1917, United States Department of Agriculture.

The Manual Arts Teachers of Southern Kansas held their annual convention October 19 and 20 in connection with the meeting of the Southern Teachers' Association at Wichita. Mr. Charles S. Huey presided at the sessions. Among the speakers were: L. H. Alberty, of Winfield, Kans.; J. F. Parks, of Wichita; John Brandenburg, of Wellington; Supt. L. W. Mayberry, of Wichita.

Mr. Heman J. Barber, Director of Shopwork in the Altgeld School, Chicago, has recently worked out a plan for more closely correlating the industrial work in the shops with English, geography and other academic subjects taught in the school.

Mr. Barber and his associates discuss with the classes each month a specific topic and illustrate it in the regular projects on which children are working. During the same month the academic teachers require of the classes a composition as an English exercise on the special subject of the month. The following outline will give an idea of the topics chosen for the first five months of the current school year.

Sixth Grade.

September—Care and use of soldering copper.
October—Our shop tools and their use.
November—Common metals from mine to manufacturer.
December—Use of metals in the industries.
January—The combination of metal, wood and concrete.

Seventh Grade.

September—History of iron and steel.
October—Some familiar uses of wire and sheet metal.
November—Copper and its alloys.
December—A visit to the shops of Lane Tech.
January—Our shop problems in science and metalwork.

Eighth Grade.

September—Metals used in the electrical industries.
October—New methods of mining and refining metals.
November—Location of the world's great ore deposits.
December—The rare metals and their uses.
January—The value of industrial work in the school.

The Industrial School, formerly conducted in the Longfellow School at La Crosse, Wis., has changed its name to Vocational School.

Terre Haute, Ind. Typewriting and salesmanship are offered at the Vocational School for Girls.

Escanaba, Mich. Domestic science and manual training have been extended to include the eighth grades.

Green Bay, Wis. A printshop has been installed in the vocational school.

Four lines of instruction are to be included in the vocational course offered in the public schools of Nebraska. Agriculture and home economics will be first and of chief importance. Courses are also provided in common trades and manual training.

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W. H. Wright, teacher of manual training, Seymour, Ia., National Army.

N. Lloyd, teacher of manual training, Butte, Mont., National Army.

J. E. Walker, teacher of manual training, Woodfords, Me., 26th Co. U. S. Coast Artillery.

W. W. Light, teacher of manual training, Brook High School, Brook, Ind., National Army.

Philip H. King, Gorham, Me., Camp Curtis, First Maine Heavy Field Artillery, Battery B, Boxford, Mass.

A. E. Granger, principal, vocational school, Corning, N. Y., National Army.

Paul E. Harrison, De Kalb, Ill., Camp Logan, Texas.

G. A. Holmberg, Watt School, Pittsburgh, Pa., enlisted in Signal Corps.

Ralph E. Fisher, Dilworth School, Pittsburgh, Pa., Camp Hancock.

E. Lee Barnett, Dilworth School, Pittsburgh, Pa., Camp Hancock.

J. Blaine Ogden, Latimer Junior High School, Pittsburgh, Pa., Officers' Training Camp, Fort Oglethorpe.

A. M. Goldberger, principal, North Continuation School, Camp Lee.

F. J. Weigle, McKeesport High School, Pittsburgh, Pa., Camp Oglethorpe.

The following Pittsburgh teachers have been drafted and are now awaiting the call for service: M. L. Herrington, Woodslair School; Orley E. Hill, Larimer School; Hugh McCall, Liberty School; D. J. McLaughlin, Hazelwood School.

Among the former Tech students who are enlisted in the Officers' Reserve Training Camp at Fort Oglethorpe are: F. S. Black, H. M. Phillips, Brandon Smith, H. Levy, E. S. Lundell, Edward Crump, G. S. McElroy, H. J. McCorkle, F. R. Cogswell, Vernon Wilson, H. Oakes, C. C. Macmillan, D. H. Jones, C. D. R. Ingalls, A. W. Einstein, J. W. Schaupp and G. S. Blair.

Mr. E. W. Hamman, teacher of manual training, Officers' Training Camp, The Presidio, San Francisco, Cal.

Mr. George E. Davenport, director of manual training, Elk City, Okla., Federal Army.

Mr. L. H. Lovelace, St. Paul, Minn., Federal Service, U. S. Army.

Private A. E. Howell, Co. C, 313th Engineers Corps, Camp Dodge, Ia.

V. F. Roby, Baltimore, Md., U. S. Army.

J. C. Sowers, Kingman, Ind., Aviation Corps.

J. L. Cleaver, Elyria, O., Brooklyn Navy Yard.

Mr. Earl L. Minch, teacher of manual training, Howe, Ind., U. S. Army.

The following men in the industrial arts department of the Oregon Agricultural College, Corvallis, are in the government service: J. W. Motley, Aviation service, somewhere in France; Theo. A. Ellestad, Aviation service, San Antonio, Texas; A. C. Archbold, Coast Guard Artillery; John M. Hamilton, Officers' Training Camp, San Francisco; Brewer A. Billie, Field Hospital service, somewhere in France; Harold W. Turner, Aviation service, San Antonio, Texas.

Mr. Norman Arthur, Detroit, Mich., U. S. Army.
Mr. William Bolt, Detroit, Mich., U. S. Army.
Mr. Verne Fryklund, Detroit, Mich., U. S. Army.
Mr. Perry F. Gifford, Detroit, Mich., U. S. Army.
Mr. George Guy, Detroit, Mich., U. S. Army.
Mr. Willis Horn, Detroit, Mich., U. S. Army.
Mr. Clinton Morgan, Detroit, Mich., U. S. Army.
Mr. Donald McGuire, Detroit, Mich., U. S. Army.
Mr. Ralph E. Hyhus, Detroit, Mich., U. S. Army.
Mr. Chat. A. Pickins, Detroit, Mich., U. S. Army.
Mr. Paul Thompson, Detroit, Mich., U. S. Army.
Mr. John White, Detroit, Mich., U. S. Army.

A. C. Taylor, Industrial Arts Department, Cincinnati, O., National Guard.

Richard M. Gubsch, Industrial Arts Department, Cincinnati, National Army.

William Kluber, Industrial Arts Department, Cincinnati, National Army.

Robert Houghton, Continuation School, Boston, National Army.

George Adamson, Boston, National Army.

Wm. L. Young, Boston, National Army.

Chicago, Ill. (Elementary manual training teachers)—Frank Culhane, William Fox, Harry McHale, Francis Morgan, David Gibbons, Elmer Swanson, Frank Gerty, Edward Bourke, George Post and John Polka.

Mr. R. M. Kettering, Manual Training Department, Indianapolis, Ind., U. S. Army.

Mr. D. B. Lutz, Manual Training Department, Indianapolis, Ind., Aviation Corps.

Mr. R. W. Miller, Manual Training Department, Indianapolis, Ind., U. S. Army.

Mr. E. J. Whelan, Manual Training Department, Indianapolis, Ind., Marine Corps.

Mr. Daniel H. Shay, Springfield, Mass., Captain Quartermasters Corps.

Mr. Jay Fisk, Springfield, Mass., Machine Gun Instructor.

Mr. R. E. Howard, Springfield, Mass., Aviation Corps.

Mr. V. A. Hadd, Springfield, Mass., U. S. Army.

Mr. H. B. Fisher, Louisville, Ky., 159th Artillery, U. S. Army.

Mr. L. D. Switzer, Louisville, Ky., Training Camp, Fort Dodge, Ia.

Mr. M. T. Paine, Louisville, Ky., U. S. Cantonments.

Mr. Geo. F. Grant, Louisville, Ky., Lieutenant.

Mr. F. T. Moss, Louisville, Ky., Lieutenant of Infantry, Fort Dodge, Ia.

Mr. Ralph C. Wilson, teacher of manual training, St. Louis, Mo., 1st Lieutenant, U. S. Army.

Harry Nelson, Dixon, Illinois, Aviation.

L. A. Tuggle, Danville, Ill., Capt. Co. H, 8th Illinois, Houston, Tex.

John A. Cox, Indianapolis, Ind., United States Army.

H. H. Farr, Bessemer, Ala., United States Army.

Leslie G. Martin, West Henrietta, N. Y., United States Army.

MANUAL TRAINING TEACHERS OF UPPER PENINSULA MEET.

The Manual Training Section of the Upper Peninsula Educational Association of Michigan held an enthusiastic meeting October 11 and 12, at Escanaba. Mr. R. D. West, who prepared the program for the meetings, was also in charge as chairman.

Miss Eva Brown of Escanaba acted as chairman of the Art Section. Rev. F. X. Barth of Escanaba spoke on "Medieval Art"; Floy Donaldson of Eau Claire on "Art as Taught in the Public Schools" and Anna Erickson of Ironwood on "Costume Designing."

The Manual Training Section held its meeting immediately following the Art Section. Mr. C. A. Strange, the first speaker, discussed "Fundamentals of a Complete Drawing Course;" Mr. J. W. Dockar of Menominee gave an address on "Vocational Significance of Iron Work in Manual Training;" Mr. W. B. McClintock of Marquette spoke on "Are the Aims of Manual Training Changing?"

The Domestic Science Section was in charge of Grace F. Hadley of Ishpeming. Gertrude Moutrie of Gwinn spoke on "Food Conservation" and Gladys Campbell of Menominee on "Teaching Cooking on the Meal Basis or on the Food Stuffs Basis."

A number of round-table discussions were held on the second day for teachers of manual training, art and domestic science. Among the subjects discussed were Project Work in Manual Training; The Value of a Textbook in Developing Content in Manual Training; Formation of Posters; Design and Its Application; Value of Color Charts; Decreasing the Cost of Cooking Lessons and Substitute Lessons; Textiles and Draughting in the Public Schools, and Art of Home Making in the Schools.

COMING CONVENTIONS.

Nov. 26-28—Manual Training Section (Montana Teachers' Association) at Helena.

Nov. 26-28—Fine, Industrial and Household Arts Section (New York Teachers' Association) at Syracuse. Wm. B. Kamprath, Pres., Buffalo. Probable attendance, 500. There will be a commercial and educational exhibit.

Nov. 29-Dec. 1—Home Economics Section (Texas State Teachers' Association) at Waco. Grace R. Berry, Secy., San Marcos.

Nov. 30-Dec. 1—Manual Training Section (Texas State Teachers' Association) at Waco. Probable attendance, 75. There will be a commercial and educational exhibit.

Dec. 27-29—Manual Training Section (Oregon Teachers' Association) at Portland. A. R. Nichols, Secy., Corvallis. Probable attendance, 200.

Dec. 27-31—Domestic Science Section (Utah Educational Association) at Salt Lake City. Miss Anna Christensen, Secy., Salt Lake City. Probable attendance, 200.

May 1, 2, and 4.—Western Art and Manual Training Association at St. Paul, Minn.

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If you are interested in the purchase of any of the items listed below, or if you want catalogs for your files, do not hesitate to check this list and mail it to the address given below:

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NEWS AND NOTES

The American School Peace League has announced its annual prize essay contests for the school year 1917-18. As usual a prize will be awarded to seniors in normals schools. This year's subject will be "The Teaching of Democracy as a Factor in a League of Nations." The second contest will be opened to seniors in high schools, and will have as its subject the question "How Should the World be Organized so as to Prevent Wars in the Future?" Full details of both prize contests may be had by addressing Mrs. Fannie Fern Andrews, 405 Marlborough Street, Boston, Mass.

Supervisor George D. Stoeckel, of the Child Welfare Department of Reading, Pa., in his annual report for the year ending July, 1917, shows that eight continuation schools were in session for the full term, with a total enrollment of 1,780 pupils. The schools were run on the two-hour, four-hour and eight-hour plans. The membership, which consisted of 934 male and 843 female pupils, received instruction in manual training, and in sewing and domestic science respectively. There were 2,437 employment certificates issued, 213 were denied permits and 741 secured work. Seven children failed to pass a medical examination.

The success of the continuation schools has been made possible thru the co-operation of the employers who have shown their willingness to assist in the work. Only four certificates were revoked for failure to attend school. The attendance during the year was maintained at 95 per cent, a high standard to be attained in the opinion of the school authorities.

A continuation school for boys and girls between the ages of 14 and 16 who are regularly employed, is at present in operation at one of the grade buildings under the name of a Junior High School for Continuation Pupils. Pupils who attended school formerly have been transferred to this building. The total enrollment has reached 1,203, of which 607 are boys and 596 are girls. Pupils are divided into groups, each group being in attendance two half days of each week and the days so arranged that the manufacturer is able to have two hours more of the time of the pupil or a total of 39 hours a week. These two hours mean additional compensation for the students.

The Art Alliance of America held its Second Annual Exhibition of Textile Designs October 22nd, at the society's galleries on East 47th Street. The Art Alliance serves as a connecting link between the producers and consumers of art in every field and its exhibitions have aroused the interest of the textile industries.

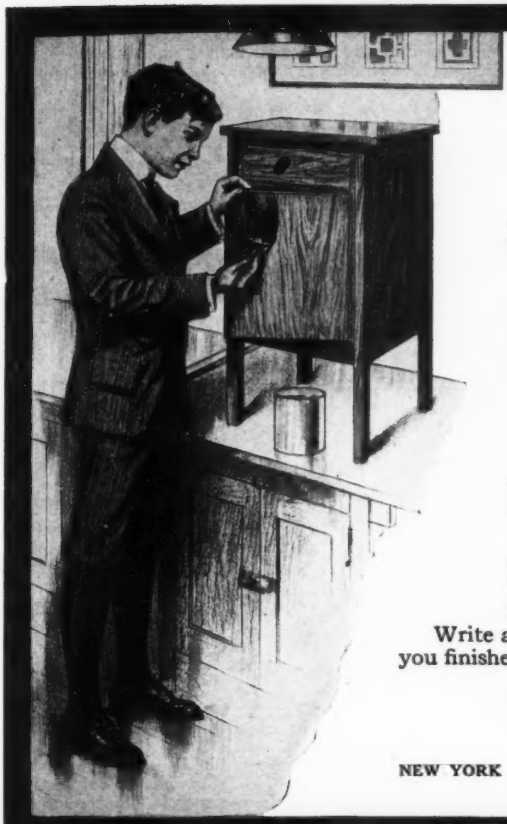
The exhibition resulted in the drawing of prizes totaling $1,000. A prize of $250 was awarded to M. C. Carr of New York City for the best design, which took the form of Chinese work; the second prize of $125 was awarded to Alice M. Hurd of Mt. Vernon, and the third prize of $100 went to Margaret Zorach of New York. A special prize of $50 given for the best design applicable to cotton goods for women's wear went to Francis F. Fulton, of New York City. Four special prizes of $50 each were awarded for the best decorative designs and eleven additional prizes of $25 each were given for designs adapted to silk or cotton. All of the pieces exhibited were quiet and serious in contrast with the brilliant coloring of former seasons.

All of the designs submitted were judged by a committee of seven representative men in the field of textile art and will be placed on the walls of the society's galleries.

The Oregon Agricultural College, at Corvallis, opened the school year of 1917-18 with an unusual attendance considering present conditions. The attendance during the first few days reached 1,553, or eighteen more than last year. The senior class enrolled five more than last year and the enrollment of men students continues to outnumber the women two to one. Among the new departments in vocational subjects which have been opened are the school of pharmacy and the department of horticulture.

The Ford Motor Company, of Detroit, Mich., has adopted a policy thru which a selected group of one hundred workers in the technical department are sent to the mechanical laboratories each year to study automobile engineering. Among the men selected this year is Mr. Albert Lorenger, who has been for the past year a member of the faculty of the Ford Trade School. Mr. Lorenger was formerly supervisor of industrial arts at Walla Walla, Wash., and assistant professor of mechanical arts at the summer sessions of the Washington State Normal College.

The University of South Carolina at Columbia, offers evening courses in French, engineering, English, mathematics and topographical drawing for soldiers who find it possible to study in the University classrooms. It is planned to offer a number of courses in buildings at the training camp at Camp Jackson.



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NEWS OF THE MANUFACTURERS

A NEW PREPARED WAX.

S. C. Johnson and Son, Racine, who have for 35 years manufactured stains, wood dyes and prepared wax, have just placed on the market a new wax that will be of particular interest to manual training teachers.

It is exactly of the same high quality as the well-known paste, except that it is in liquid form. It is guaranteed to contain no oil or other injurious substances, and in use acts exactly like the paste wax. It is supplied in a wide mouthed glass jar with a re-seal cap.

Johnson's liquid wax will appeal especially to manual training teachers whose pupils find the paste wax difficult to apply to shop projects. It is more easily worked into angles and corners, and can be spread over flat surfaces with greater rapidity. Teachers who have used it declare that it removes the last objections to wax as a finish for shop projects.

S. C. Johnson and Son are prepared to send generous samples and complete literature to any reader of the *Industrial-Arts Magazine* who will address the factory at Racine, Wis.

HELP FOR PINE USERS.

A shop library is as truly a part of the necessary equipment of an efficient manual training department as are the benches and tools. If well chosen it is the receptacle of the best theory and the newest developments in the art of woodworking, printing, etc. It contains not only formal professional books but also pamphlets and magazines gathered from a hundred sources. And not least in value is a collection of trade circulars directly related to the work in hand.

A valuable series of trade pamphlets has been issued during the past few years by the Southern Pine Association. To mention only a few will give a clue to their content but will hardly indicate their practical value:

Farm and *Home Mechanics*. Prepared by the United States Office of Indian Affairs. In addition to a discussion of woodworking, painting and blacksmithing which the farm boy should be able to do, the pamphlet includes a collection of farm projects in wood.

Smaller Farm Buildings. A good collection of working drawings and directions for making corn cribs, hog houses, etc.

A Hundred Handy Helps for the Farmer and His Home. A hundred home made tools and devices are illustrated and described. They range from a simple wire stretcher to a wagon rack for swine.

The Southern Pine Association will send any of these pamphlets to those who will address its New Orleans office.

A BOOK ON PENCIL SKETCHING.

There is hardly an art teacher in the United States who knows anything of the leaders in his or her profession, who does not know and has not enjoyed the delightful pencil sketches of Harry W. Jacobs, of Buffalo. Few American artists indeed can use the pencil as a single medium for expressing so characteristically color, texture and atmosphere.

Admirers of Mr. Jacobs' work, and in fact all teachers of drawing will be interested in a discussion of pencil sketching and its technique, prepared by Mr. Jacobs, and illustrated with nine of his most characteristic drawings. The article has been published in the form of a pamphlet by the American Lead Pencil Company, and incidentally argues for the use of the well known Venus Pencil. Copies will be sent gratis to any teacher or student of drawing who will address the American Lead Pencil Company, at 220 Fifth Avenue, New York City.

CRAFTSMAN'S PRODUCTS.

The Craftsman's Guild of Western Springs, Ill., offers to teachers and lovers of original, hand-made furniture, jewelry, rugs, children's toys, etc., a catalog which is especially timely at this season of the year.

The Craftsman's Guild is a small company of workers who are trying to utilize the talent and labor of a few people in the village where it is located. Its products are chiefly noted for their originality and high artistic quality.

The Guild carries a complete list of arts and crafts supplies and manual training materials which it offers for sale on the basis of quality, as well as price. Complete price lists of the latter are available and will be sent to any teacher who may be interested.

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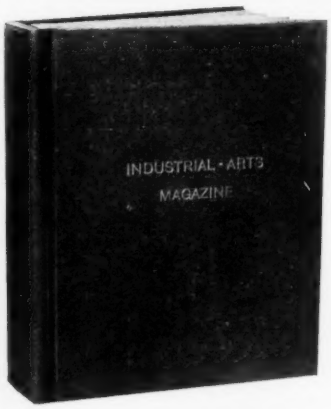

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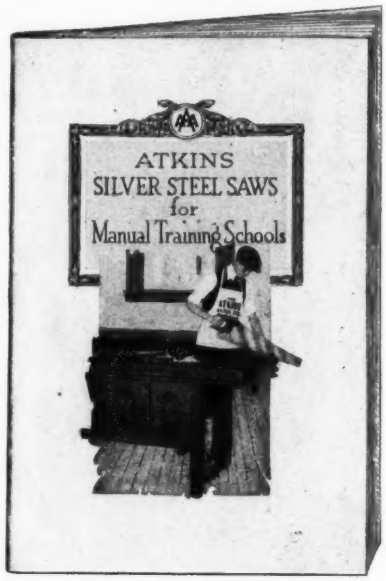
A NEW ATKINS SAW CATALOG.

The average manufacturer's catalog intended for the hardware dealer or the large industrial user of tools and machinery is a disappointment to the average manual training teacher. He becomes puzzled by the great variety of models and sizes in machinery and tools even tho he knows what he is looking for. The catalog instead of facilitating his choice, in reality hampers it.



E. C. Atkins and Company have recognized this defect in their complete catalogs and have issued a special School Catalog of their well known "Silver Steel Saws" and special edge tools. The pamphlet lists and illustrates all of the saws which the firm has found to be most widely demanded in trade schools, continuation schools and regular manual training shops. It includes also the most popular cabinet scrapers, braces, saw sets, circular saws, band saw blades and metal cutting saws used in schools.

Not the least interesting item of the booklet announces the lecture service which the firm offers. This includes expert demonstrations and discussions of the use and manufacture of saws which may be arranged for thru the home office of the firm.

Copies of the catalog will be sent to any reader of the magazine who will address a card to E. C. Atkins and Company, Indianapolis, Ind.

PERSONAL NEWS.

Mr. Albert McLeland, for eight years supervisor of manual training, Sherman, Tex., has been elected to succeed Mr. C. M. Haines as director of the manual training department in the Fort Worth Central High School.

Harry G. Clark has been appointed head of the manual training department at Modesto, Cal., to succeed Clarence T. Mudge. Mr. Mudge has left school work to accept a commercial position.

Nicholas A. Ricciardi has been appointed director of vocational guidance at Oakland, Cal. Mr. Ricciardi will have under his direction the boys and girls of the ninth to the tenth grades. It is planned to introduce co-operative courses in order that boys may work part of the time and apply the training received to actual school work.

Miss Leila Watson, of Champaign, Ill., has been appointed instructor in domestic science at Rockwell City, Ia.

John W. Hoyer, of Indianapolis, Ind., has been appointed instructor in manual training at the high school, Bloomington, Ill.

I. B. Nelson has been appointed instructor in cabinet and mill work at the State Trade School, South Manchester, Conn.

Robert E. Hamill has been reappointed as supervisor of manual training at Holyoke, Mass., at an increased salary.

Everett B. Durfee, formerly principal of the Bradford Durfee Textile School, Fall River, Mass., died early in October after a long illness. He was 55 years old.

John M. Shrigley, formerly president of the Williamson Trade School, died at his home in Lansdowne, Pa., at the age of 73. He was the first president of the school and served in that position until 1912.

J. L. Cleaver, instructor in manual training at Elyria, O., has been called out with the Naval Reserve at the Brooklyn Navy Yard.

Miss Ava B. Milam, who has been for the past thre years professor of domestic science, has been appointed dean of the School of Home Economics at the Oregon Agricultural College at Corvallis.

PERSONAL NEWS NOTES.

Donald B. Tibbetts, of Pipestone, Minn., has been appointed instructor in manual training in the high school at Shakopee.

Orthello Saunders has been appointed instructor in manual training at Utica, N. Y.

Mr. Roy D. Hissong, of Winfield, Ia., has taken charge of the manual training department in the high school at Redfield, S. D. Mr. Hissong's department will occupy shops in a new high school building to be completed April 1.

Miss Claire Snyder has been appointed supervisor of continuation schools at Altoona, Pa.

Mr. Russell Clunie, of Parker, S. D., has resigned to become instructor in mechanical drawing in the Continuation School at Sheboygan, Wis.

Miss Edith Phelps, who has been director of art, South Bend, Ind., for several years, is teaching in one of the New York City high schools this winter.

Dr. Anson Phelps Stokes, secretary of Yale University, has been appointed principal of Hampton Normal Institute to succeed the late Dr. H. B. Frissell. The school is one of the largest devoted to the vocational education of negroes in the United States.

Mr. Charles Daly has resigned from Mechanics' Institute at Rochester, where he has taught during the past five years, to become instructor in pattern-making, in the Stuyvesant High School, New York City.

Miss May Anderson is in charge of the domestic science department and Ralph O. Edick, formerly of Deadwood, S. D., is in charge of the manual training department and the high school band, Winslow, Ariz.

Mr. Howard R. Porter has recently become supervisor of manual training at Olympia, Wash. Olympia is a city of 12,000 inhabitants and its school system includes a modern high school and six elementary schools. The high school is overtaxed and a new home is to be built for the coming year. A modern forge shop and a foundry will be added to the present shops which include a complete woodworking department, a forge shop and a sheetmetal shop.

Miss Laura R. Way, formerly supervisor of art in the public schools of Colorado Springs, is now filling a similar position in Butte, Mont. Miss Way succeeds Miss Alice Dinsmore, who died last spring after a service of seventeen years.

Mr. Ben W. Johnson, director of vocational education in Seattle, has been appointed Regional Agent for the Pacific North West by the National Board of Vocational Education.

Mr. John W. Hoyer has accepted the position as supervisor of the industrial arts department, at Bloomington, Ill. The department is growing rapidly, and is housed in the new high school building which was completed last summer.

Mr. H. B. Lentz, who graduated from the Santa Barbara Normal School last February, and joined the faculty of George Henry Jensen, director of industrial arts, at Stockton, Calif., left for American Lake October 3.

Mr. H. A. Campion, a Stout graduate, who taught draughting in the Boise, Idaho, High School, left for American Lake on October 15, from the same faculty. Both of these men were granted leave of absence by the Board of Education and may resume their positions when they are discharged by the government.

F. F. Latta, in charge of the manual training in the high and grammar schools at Newman, Calif., is with the Machine Gun Company, 363rd Infantry, Camp Lewis, Washington.

George Streiff, in charge of the manual training department at Oakland, is also at American Lake.

J. L. Closse, of Judd, N. D., has resigned to become instructor in manual training at the Junior High School, Warren, O.

John Wilhite has been appointed director of the manual training department at Chickasha, Okla.

Ira W. Spear, of Valparaiso, Ind., has resigned to accept a position in the schools of Pittsburgh, Pa.

D. K. Finch has been appointed head of the manual training department at McLaughlin, N. D.

Mrs. M. E. Riley, supervisor of art in the public schools of St. Louis, Mo., has resigned after a service of 43 years.

Miss Ingerd Nissen has been appointed as secretary to Miss Katherine F. Ball, vocational director at the University of Minnesota.

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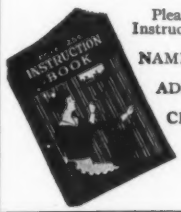

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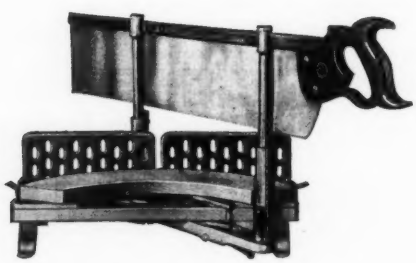

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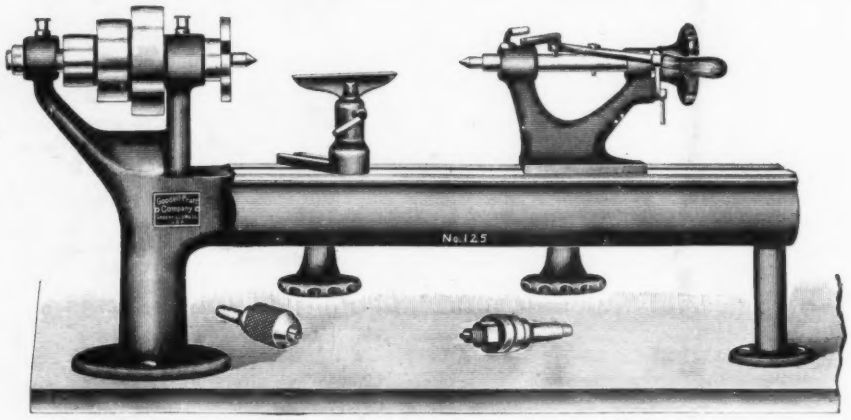

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